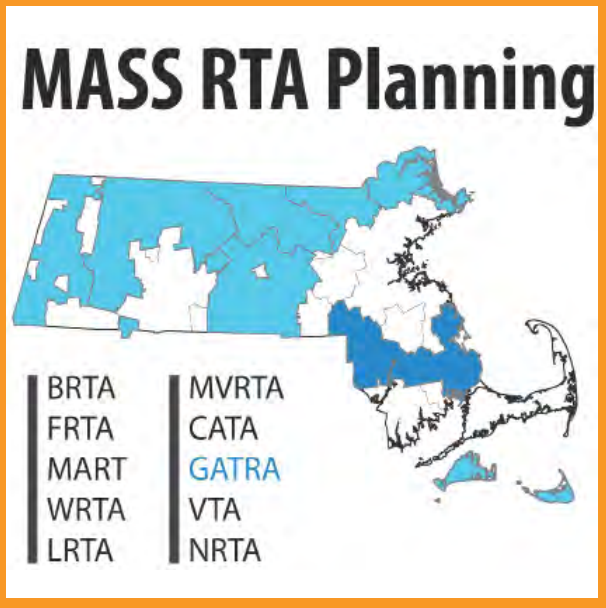

Greater Attleboro-Taunton Regional Transit Authority

Regional Transit Plan

Final Report - September 2015

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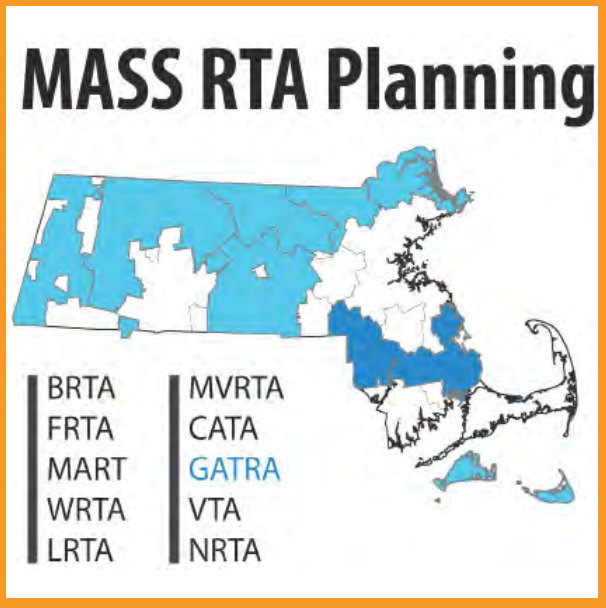

Executive Summary

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EXECUTIVE SUMMARY

Overview

The State Legislature, in response to requirements of the Transportation Finance Bill passed in 2013, tasked each Regional Transit Authority (RTA) in the Commonwealth of Massachusetts to prepare a Regional Transit Plan. The purpose of this plan is to:

- examine existing service
- identify local markets with potential ridership
- provide recommendations on ways to improve service operations.

The consultant firm of AECOM was selected to prepare this plan with assistance provided by Greater Attleboro-Taunton Regional Transit Authority (GATRA), MassDOT, and local stakeholders.

GATRA provides local fixed route bus service for the cities of Attleboro, Bellingham, Berkley, Carver, Dighton, Duxbury, Foxborough, Franklin, Hanover, Kingston, Lakeville, Mansfield, Marshfield, Medway, Middleborough, Norfolk, North Attleboro, Norton, Pembroke, Plainville, Plymouth, Raynham, Rehoboth, Scituate, Seekonk, Taunton, Wareham, and Wrentham. Dial-a-Ride and ADA Paratransit service is available to the 28 member communities and GATRA also provides service to the region's MBTA stations via fixed route or shuttle service. Figure 1 depicts GATRA's service area.

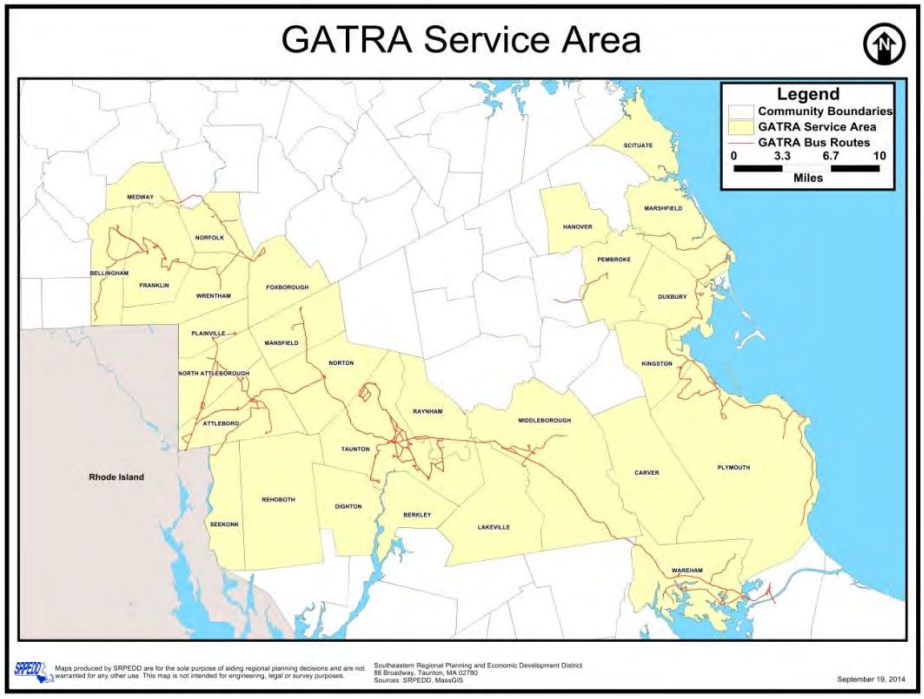


Figure 1. GATRA Service Area

There are thirty (30) fixed bus routes which provide weekday service between 5:00 AM to 11:15 PM during the week, 8:30AM to 12:00 AM on Saturdays, and 9:00 AM to 5:30 PM on Sunday. With a fleet of 46 buses, GATRA requires 39 vehicles for peak service. GATRA carried 855,000 passengers in FY 2014.

Recommended Phase Approach

To meet the goals of the plan, recommendations are made to improve GATRA service over three phases, as follows:

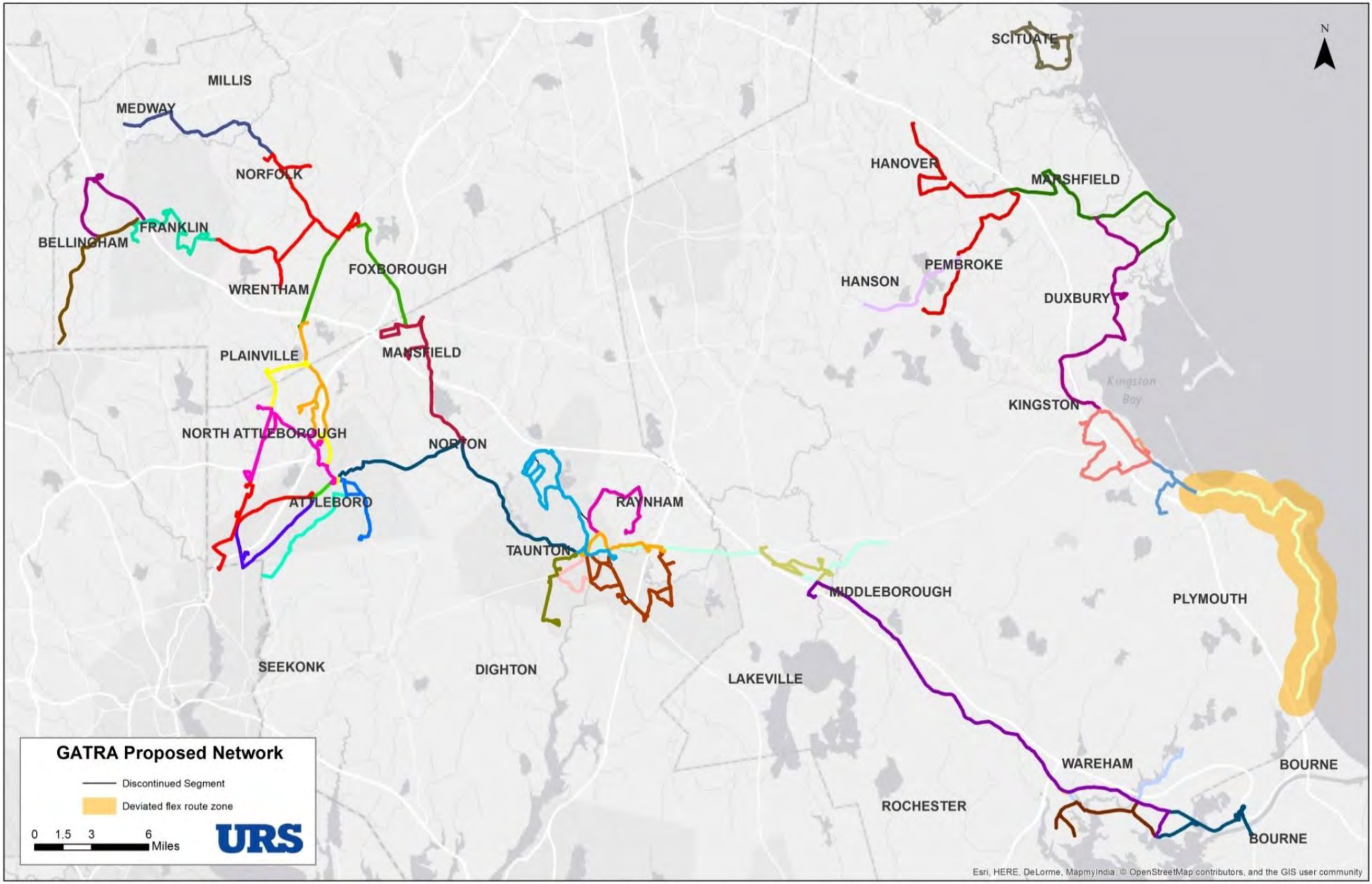
In Phase 1, underutilized routes are eliminated and routes are modified to improve efficiency. Several routes are extended to new service areas and some fixed routes are converted to deviated fixed routes.

During Phase 2, new routes are implemented, service is expanded and frequencies are improved.

Finally in Phase 3, service is expanded to 10 PM on selected routes and service on Sundays is implemented on all GATRA routes. The North Bellingham T-Shuttle is expanded to provide all day service, and service is expanded on Plymouth Area Link routes.

Figure 2 depicts the GATRA service area with the proposed route network based on the recommendations in all three phases.

Figure 2. Proposed Route Network



Benefits

Implementing the phased recommendations would provide benefits to GATRA and aid them in meeting their goals and objectives to provide a cost-efficient system while maintaining a high level of service to its riders. The phased service improvements would result in the following benefits:

1. Extending hours of operation during the week, and implementing service on Sunday will expand mobility in the region.
2. Eliminating underutilized or redundant routes will streamline GATRA's service.
3. Adjusting route alignments and expanding service to new areas will effectively meet the transit needs of GATRA passengers.
4. Improving route frequencies will provide a higher and more convenient level of service to GATRA riders.

The following are GATRA objectives that have been met through the development and selection of the phased recommendations:

Goal 1: Better Align Service with Needs

GATRA seeks to ensure access to transit service that meets the demands of the community and provides residents access to jobs and services.

Objectives:

- Improve existing service frequency and service options and/or implement new service to meet the demands of present and potential users which will make bus use an attractive transportation alternative.
- Work with the community to identify transit-dependent populations in need of public transit service options.

Goal 2: Increase Ridership and Fare Revenues

GATRA seeks to provide an attractive, accessible alternative transportation option that meets mobility needs while contributing to increased access to opportunities and a healthy environment for residents and visitors.

Objectives:

- Increase transit frequency and service options to make bus use an attractive transportation alternative.

Goal 4: Meet the Needs of A Diverse Summer Tourism Population in Coastal Communities

GATRA would like to expand and increase services and frequencies to meet the needs of the increased and diverse summer populations in coastal communities.

Objectives:

- Increase transit frequency and service options to make bus use an attractive transportation alternative.

Goal 5: Improve Efficiency and Cost-Effectiveness of System

GATRA seeks to operate their transit system in a way that is both efficient and cost-effective so that transit needs are met without spending undue resources.

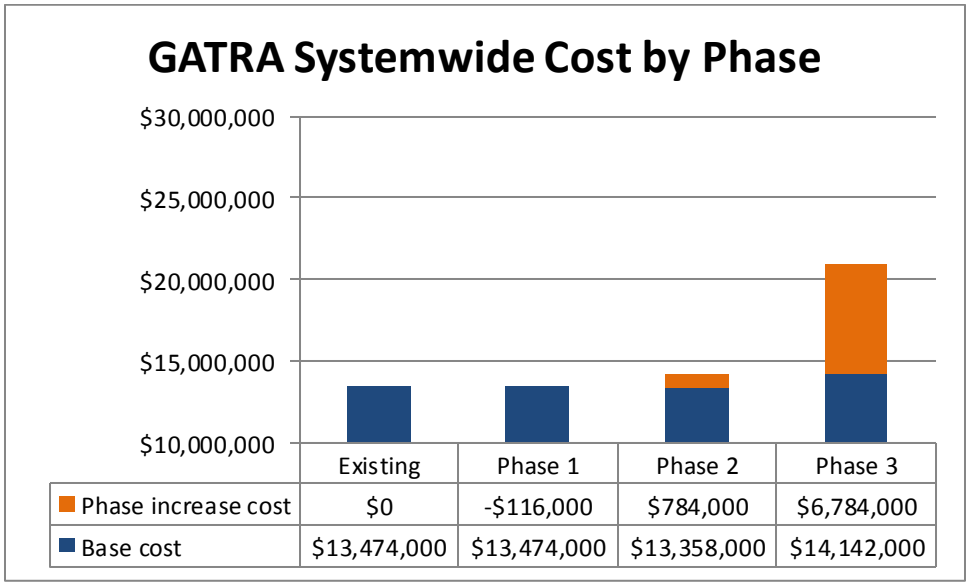
Objectives:

- Review the system usage and identify over- and under-served locations within the region.
- Work with the community to identify transit needs.
- Wherever appropriate adjust service options and frequencies to match with the identified needs.

Cost Estimation

With the implementation of each phased recommendation, additional operational and capital improvements would increase GATRA's annual cost. Figure 3 depicts the base operating costs for the existing system along with the additional costs associated with the service improvements in each phase.

GATRA's existing annual revenue operating hours for fixed route service are 87,759; these hours are expected to increase throughout each phase. During Phase 1 annual revenue hours would increase by 768; annual revenue hours would increase by 11,829 in Phase 2 and finally by 29,434 in Phase 3.



	Existing	Phase 1	Phase 2	Phase 3
Phase increase cost	$0	-$116,000	$784,000	$6,784,000
Base cost	$13,474,000	$13,474,000	$13,358,000	$14,142,000

Figure 3. Cost by Phase

Capital Costs

Phase 1 service improvements have been designed using the constraint of GATRA's existing fleet of 46 buses. Currently GATRA requires 39 vehicles during peak service and recommendations in Phase 1 call for only 37 vehicles during peak service.

Additional vehicles will be required for the recommendations presented in Phases 2 and 3. To implement these phases in a timely manner, the GATRA must begin the planning process now as vehicle procurement can take up to two years before the buses can be put into service. In Phase 2, peak service will require 43 vehicles and Phase 3 will require 47 vehicles.

Framework

Recommendations were developed using a cumulative process that incorporated public outreach, a diverse steering committee, operational input from GATRA, and analysis of existing transit service and the local/regional market. Strategies to improve the system were developed based on GATRA's goals and objectives and the following guidelines:

1. **Simplify** – Routes should be designed along main corridors with minimal schedule deviations. For routes that are not linear, service should be provided in both directions.
2. **Service should match demand** – The denser (both in terms of employment and population) areas should have a higher level of service with either higher frequency routes or multiple lower frequency routes. Major corridors often warrant higher frequencies.
3. **Priority to existing ridership** – Service should be increased in areas that warrant it over servicing new areas if limited resources are available.
4. **Connections –** No route should be designed in isolation. If possible it should connect to at least one hub. Where connections to hubs are not possible the route should connect with at least one other route to facilitate transfers.
5. **Efficiency** – Where possible routes should be designed to be the most efficient. Decisions to deviate off the main corridor and add time to the route are only warranted where key destinations like shopping centers are too far off the main road, there are a lack of pedestrian facilities or the benefit (due to demand) of servicing the deviation outweighs the additional time incurred to others on the route.
6. **Regional network** – Regional connections should be improved to provide access outside of the GATRA service area through transfers with other RTAs or the MBTA, to areas identified as common destinations through the market analysis and public outreach process.

Task Summaries

The Transportation Finance Bill assigned the following nine tasks to be evaluated by each RTA:

Task 1. Comprehensive Assessment of Transit Services

GATRA has identified five goals to help guide service improvements. These goals, as outlined below, have been considered in the development of this Regional Transit Plan.

Goal 1: Better Align Service with Needs
Goal 2: Increase Ridership and Fare Revenues
Goal 3: Advocate for More Funding from the Legislature
Goal 4: Meet the Needs of A Diverse Summer Tourism Population in Coastal Communities
Goal 5: Improve Efficiency and Cost-Effectiveness of System

Task 2. Examination of Ridership Trends

Ridership data collected from FY 2012, 2013, and 2014 was used to analyze yearly transit ridership trends. In FY 2014, GATRA reported 855,000 passenger trips. Use of GATRA's service is growing each year as is evidenced by the increasing ridership levels; between FY 2012 and 2014 ridership increased by 3%. The top three weekday routes that experienced the most growth over this period are Routes 3 (92% increase), 9 (50% increase), and 11 (17% increase). The significant growth in ridership that occurred on Route 3 is not unusual; this route is relatively new and had low initial ridership when implemented in FY 2011.

Task 3. Performance Analysis of Service

Each route in the GATRA service area was evaluated based on several factors including ridership, passengers per revenue hours, and subsidy per passenger. The top performing routes during the weekday include Medway and Routes 8 and 10. These routes are top priorities for service investment and may benefit from increased service frequencies or service spans. Routes performing below average, such as the Wareham/Lakeville Train Connector, may require additional analysis to determine the cause of the problem or may be considered for discontinuation of service.

Task 4. Develop and Evaluate Service Alternatives

Service alternatives for the entire GATRA system were evaluated through a process that incorporated public outreach, a diverse steering committee, operational input from GATRA, and analyses of the existing transit service and local market. Alternatives were guided by the five goals identified by GATRA to improve service. Preliminary alternatives were presented to GATRA at a workshop where they were further refined.

Task 5. Recommendations to Better Align Service

Recommendations for GATRA have been presented through a three phase approach. Phases establish the immediacy and prioritization of needs and are based on an incremental approach and by the availability of resources. Recommendations in Phase 1 can be implemented immediately while recommendations in Phase 2 and 3 can only be implemented as resources become available.

Phase 1 recommendations primarily consist of service eliminations and consolidations; the savings from this can be applied to offset costs associated with expanding service on the Attleboro 24 and Middleboro Downtown Shuttle. Phase 2 seeks to implement two new routes: Route 2, which services

MA-138 in Taunton and the Raynham Council on Aging; and the Plainridge route serving the Plainridge Park Casino. Lastly, in Phase 3, service is expanded later in the evening on most routes; service is implemented on all routes on Sundays; a new route is implemented in Bellingham and Scituate; and routes in Wareham and Plymouth are extended to meet seasonal demands. Phase 2 and Phase 3 focus on not only improving the current service but adding service to areas that have identified a need.

Task 6. Commonwealth's Environmental Policies

GreenDOT's implementation plan, developed in 2012, identifies themes, goals and indicators to guide transportation development to a more sustainable future. An evaluation of GATRA's services was conducted to determine their ongoing compliance with the policy. While there are over 300 short, medium, and long-term indicators, only 68% are applicable to GATRA. Of these applicable indicators, GATRA is already meeting 40% and working towards meeting additional medium-term indicators by 2015 and long-term indicators by 2020.

Task 7. Fare Rates and Collection Methods

GATRA installed Genfare Odyssey (GFI) fareboxes in June 2006 on all fixed route vehicles with the exception of routes that operate in Franklin, Mansfield and Wareham. In April 2014, GATRA installed a Ticket Vending Machine (TVM) in its Taunton terminal where passengers can purchase tickets and passes. An adult fare costs $1.00 and a day pass is $3.00; other passes available include a 3-day pass, 10-ride pass, and a 31-ride pass. Moving forward, GATRA should explore new technology, such as mobile payments or Bpay/Magic Band/Uband, to replace outdated fare collection methods.

Task 8. Region's Job Creation Goals and Employment Needs

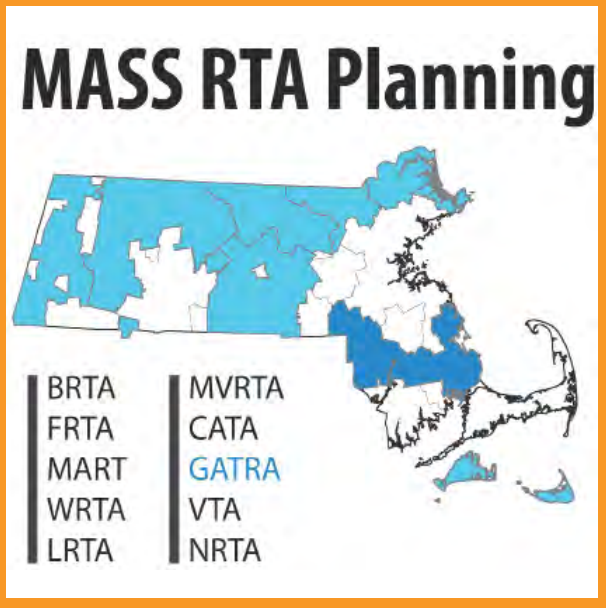
Industry in the GATRA region among the 28 member communities is diverse and constantly evolving. While the communities fall into different planning areas and economic districts, overall the region's industry is supported the most by the healthcare and retail sectors. Taunton and Plymouth are the strongest employment centers accounting for 22.3% of the region's employees. Close access to Boston via Routes 24 and I-495 and I-95 combined with a large stock of affordable housing has made the region a bedroom community for those who work in the Metro Boston area. Rail connections provided at the 11 commuter rail stations in the region have also contributed to a growing commuter base. Understanding the region's employment sector will allow GATRA to provide a better lever of service to meet the needs of the workers in the region.

Task 9. Determination of Effectiveness of GATRA Service to Meet the Needs of the Region's Workforce

The following indicators were used to identify demand levels across the region: population density, employment density, elderly populations, zero vehicle households, median household income, disabled households, schools, colleges and universities, hospitals, priority development areas, park and ride lots, and commuter rail. The analysis revealed that GATRA provides service to many of the areas with a high transit demand; however, eight regions have been identified as having a high transit but are not currently served by a fixed route. These regions include areas of Franklin, Wrentham, Foxborough, Mansfield, Hanover, Kingston, Carver and Plymouth. GATRA will work with these communities to

determine which transportation solution would best fit their need as a fixed route may not be the best solution. Some of these regions needs have been addressed in this plan.

Southeastern Regional Planning and Economic Development District (SPREDD), OCPC, and MAPC have identified Priority Development Areas (PDAs) for the municipalities in the GATRA region. These PDAs represent areas that have development or redevelopment potential for housing opportunities and economic growth that would benefit the region. Collectively, there are 31 PDAs within the GATRA region. Although GATRA provides transit service to most of the identified PDAs, there has been a challenge in providing a robust level of service to meet the needs of all employees in the region. GATRA operates service during traditional working hours. This creates a challenge for potential riders who work second-shift hours and need transportation. Extending service hours to meet this demand would help improve mobility in the region.



Chapter 1

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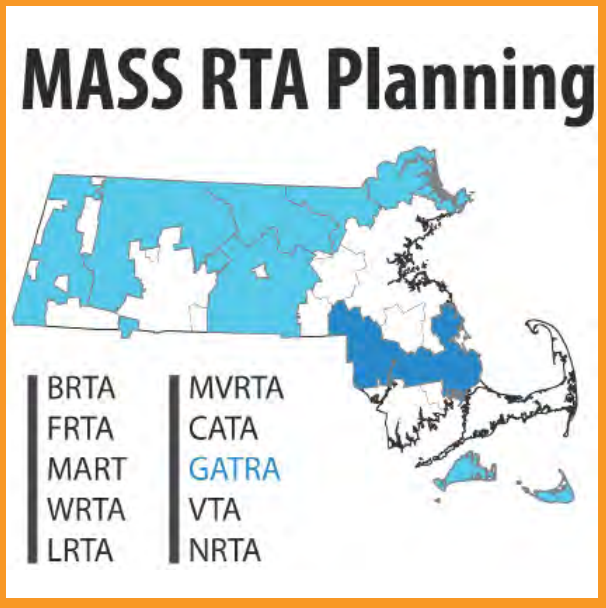
1. PROJECT OVERVIEW

The State Legislature has instructed all Regional Transit Authorities (RTAs) in the Commonwealth of Massachusetts to undertake the preparation of a Regional Transit Plan as a requirement of the Transportation Finance Bill passed in 2013. These Regional Transit Plans present an opportunity to improve local bus service operations, identify new markets of service opportunity, and meet the identified needs for public transit services in each respective RTA service area. Section 63 of the Bill notes nine discrete tasks that each Regional Transit Plan must address. These tasks are as follows:

(1) Comprehensive assessment of transit services
(2) Thorough examination of the ridership trends for each line and service provided by the regional transit authority
(3) Performance analysis of existing services
(4) Development and evaluation of alternative service scenarios
(5) Development of a recommendation to better align service with local and regional demand
(6) Commonwealth's environmental policies
(7) Fare rates and collection methods
(8) Region's job creation goals and employment needs
(9) Determination of whether the regional transit authority's service is deployed in the most effective way possible to accommodate the transit needs of the region's workforce.

Each RTA is also required to hold a public hearing on the draft relating to the development of its Regional Transit Plan in order to inform the public and gather their input.

The Greater Attleboro-Taunton Regional Transit Authority has prepared this Draft Regional Transit Plan in accordance with the Transportation Finance Bill.



Chapter 2

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2. PROJECT PURPOSE

2.1 RTA Overview

The Greater Attleboro-Taunton Regional Transit Authority (GATRA) was created in 1976 to develop, finance, and contract for the operations of mass transportation facilities and services within an ever-expanding area, which includes 28 diverse communities stretching from Southern Norfolk County and Northern Bristol County, all the way to Plymouth County and the South Shore. Over the years, GATRA has had a long-standing tradition of providing quality transportation services that are geared to improve the quality of life and assist customers in becoming more transportation independent.

Today, GATRA oversees operations of fixed route bus services in the cities of Attleboro and Taunton, and the towns of Duxbury, Franklin, Kingston, Mansfield, Marshfield, Middleborough, North Attleboro, Norton, Plainville, Plymouth, Raynham, Seekonk, and Wareham. In 2012, Hanover and Scituate became the newest communities to join GATRA. All 28 member communities have demand response (Dial-A-Ride) services for people with disabilities and seniors. In addition, GATRA plays a vital role in the provision of Commuter Rail service to Boston by providing shuttle services or direct fixed route service to MBTA stations in the towns of Franklin, Norfolk, Mansfield, Attleboro, Kingston, Plymouth, Hanover, and Middleborough.

In 1976, GATRA was created by Massachusetts General Laws Chapter 161B as a body politic and corporate and political subdivision of the Commonwealth of Massachusetts. The Authority is given general responsibility to develop, finance, and contract for the operation of mass transportation facilities and services within its territory. According to the statute, regional transit authorities cannot operate service directly, but instead must contract with private operators for the provision of service. Among the private sector companies under contract with GATRA are: Professional Transit Management of Attleboro (PTM), Plymouth & Brockton Street Railway Co., Kiessling Transit, Inc., and Bill's Taxi Service, Inc. (A&A Metro Transportation). All GATRA vehicles are wheelchair accessible and comply with the Americans with Disabilities Act (ADA). All drivers of GATRA buses are trained in wheelchair lift and securement as well as safe transportation of the public under the ADA.

2.2 Core Goals and Objectives

In April 2013, representatives from several RTAs were asked what they wanted their Regional Transit Plans to accomplish. Ideas were developed and ranked by these representatives to create a core list of goals and objectives for each RTA's Regional Transit Plan. The most highly-rated concepts – and those to which each of the Regional Transit Plans will respond – are as follows:

- Better align service with needs
- Improve efficiency and cost-effectiveness of system
- Improve transit access for the public
- Increase ridership levels

- Increase transit frequency and service options
- Increase revenue
- Improve transit access for transit-dependent populations
- Support economic development

While goals outline priorities, objectives are measurable actions that are necessary to realize the goals. The above list can be broken down as follows:

Table 1. Core Goals and Objectives

Goals	Objectives
• Increase ridership levels • Better align service with needs • Support economic development • Increase revenue	• Increase transit frequency and service options • Improve transit access for the public • Improve transit access for transit-dependent populations • Improve efficiency and cost-effectiveness of system

It should be noted that goals and objectives that were ranked favorably by individual RTAs but did not receive an overall high ranking will still be considered in the Regional Transit Plan for those authorities. Section 2.3 explains the goals and objectives that are specific to GATRA.

2.3 GATRA Goals and Objectives

In addition to responding to the core goals and objectives outlined in Section 2.2, the regional transit plan for GATRA is also based on concerns that are specific to this RTA.

Mission Statement:

It is the mission of GATRA to provide safe, courteous, cost-effective transportation to the people throughout the region. As the needs of the community grow and change, GATRA will be dedicated to meeting the challenges of modern transportation.

Goal 1: Better Align Service with Needs

GATRA seeks to ensure access to transit service that meets the demands of the community and provides residents access to jobs and services.

Objectives:

1. Promote services through marketing efforts in order to increase awareness of options for transit-dependent populations.
2. Improve existing service frequency and service options and/or implement new service to meet the demands of present and potential users which will make bus use an attractive transportation alternative.
3. Work with the community to identify transit-dependent populations in need of public transit service options.

Goal 2: Increase Ridership and Fare Revenues

GATRA seeks to provide an attractive, accessible alternative transportation option that meets mobility needs while contributing to increased access to opportunities and a healthy environment for residents and visitors.

Objectives:

1. Increase transit frequency and service options to make bus use an attractive transportation alternative.
2. Provide rider-friendly and accessible marketing material.
3. Use technology to make bus use more convenient.

Goal 3: Advocate for More Funding from the Legislature

GATRA would like to receive additional funding to offset the operating costs associated with offering regional transit service. In order to expand or enhance the existing system, increased funding will be necessary.

Objectives:

1. Leverage maximum funding from federal, state, and other sources.
2. Obtain operational funding from the state legislature.
3. Identify and pursue new funding sources.

Goal 4: Meet the Needs of A Diverse Summer Tourism Population in Coastal Communities

GATRA would like to expand and increase services and frequencies to meet the needs of the increased and diverse summer populations in coastal communities.

Objectives:

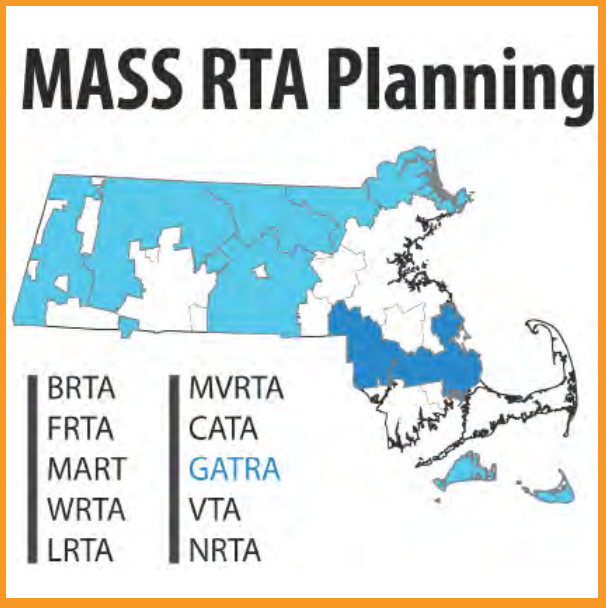
1. Educate tourists about the bus system before they arrive.
2. Increase transit frequency and service options to make bus use an attractive transportation alternative.
3. Provide rider-friendly and accessible marketing material.

Goal 5: Improve Efficiency and Cost-Effectiveness of System

GATRA seeks to operate their transit system in a way that is both efficient and cost-effective so that transit needs are met without spending undue resources.

Objectives:

1. Review the system usage and identify over- and under-served locations within the region.
2. Work with the community to identify transit needs.
3. Wherever appropriate adjust service options and frequencies to match with the identified needs.



Chapter 3

AECOM / URS
TMD
Burke & Company

GATRA
Greater Attleboro Taunton
Regional Transit Authority

3. GATRA RIDERSHIP AND PERFORMANCE TRENDS

3.1 Service Overview

The Greater Attleboro Taunton Regional Transit Authority (GATRA) provides transit service to a population of just over 570,000 people. The GATRA service area spans 867 square miles and serves the following 28 communities: Attleboro, Bellingham, Berkley, Carver, Dighton, Duxbury, Foxborough, Franklin, Hanover, Kingston, Lakeville, Mansfield, Marshfield, Medway, Middleborough, Norfolk, North Attleboro, Norton, Pembroke, Plainville, Plymouth, Raynham, Rehoboth, Scituate, Seekonk, Taunton, Wareham, and Wrentham. GATRA also provides paratransit Dial-a-Ride service to eligible individuals.

GATRA runs four types of service: local fixed-routes, commuter rail shuttles, dial-a-ride services, and ADA paratransit. Of the 30 fixed routes operated by GATRA, all 30 run on weekdays, 22 run on Saturdays, and one runs on Sundays. GATRA requires 39 vehicles for weekday revenue service, and have 46 vehicles available for service. As the service area is large with distinct clusters of routes, routes in this report are categorized by service area: Attleboro/Taunton, the Northwest (Bellingham, Franklin, and Medway), Southeast (Onset, Wareham, and Middleborough), and Northeast (Plymouth, Marshfield, Kingston, and Pembroke).

Table 2 provides an overview of the services operated by GATRA.

Table 2. GATRA Route Overview

Route	Service Type	Service Area	Description	Days Operated	Weekday Service Span	Weekday Service Frequency	Saturday Service Span	Saturday Service Frequency
1	Fixed Route	Attleboro Taunton	Westside	Mon - Sat	6:00 AM – 6:15 PM	60	9:00 AM - 5:15 PM	60
3	Fixed Route	Attleboro Taunton	Silver City/Myles Standish Industrial Park	Mon - Fri	3 AM, 3 PM trips	60 peak	–	–
6	Fixed Route	Attleboro Taunton	Whittenton	Mon - Sat	6:30 AM – 6:15 PM	60	9:00 AM - 4:15 PM	60
7	Fixed Route	Attleboro Taunton	School St./Route 44/Taunton/Raynham	Mon - Sat	7:00 AM – 6:15 PM	60	9:30 AM - 5:45 PM	60
8	Fixed Route	Attleboro Taunton	E. Taunton/Raynham Wal-Mart	Mon - Sat	5:45 AM – 7:00 PM	60	9:00 AM - 6:00 PM	60
9	Fixed Route	Attleboro Taunton	Weir/ Route 138	Mon - Sat	6:45 AM – 5:45 PM	60	9:30 AM - 4:45 PM	60
10	Fixed Route	Attleboro Taunton	Attleboro/ North Attleboro	Mon - Sat	5:30 AM – 6:30 PM	60	9:30 AM - 5:00 PM	60
11	Fixed Route	Attleboro Taunton	South Attleboro Connector	Mon - Sat	6:00 AM – 7:00 PM	60	9:15 AM - 4:30 PM	60
12	Fixed Route	Attleboro Taunton	Attleboro/ So. Attleboro/ No. Attleboro	Mon - Sat	6:00 AM – 6:30 PM	60	9:00 AM - 4:30 PM	60
14	Fixed Route	Attleboro Taunton	Attleboro/ No. Attleboro/ Plainville	Mon - Sat	5:45 AM – 6:30 PM	60	9:00 AM - 4:30 PM	60
15	Fixed Route	Attleboro Taunton	Oak Hill	Mon - Sat	10:00 AM – 5:15 PM	25-95	8:30 AM - 6:00 PM	60/90
16	Fixed Route	Attleboro Taunton	Attleboro/ Seekonk	Mon - Sat	5:30 AM – 6:00 PM	60	9:30 AM - 5:00 PM	60
18	Fixed Route	Attleboro Taunton	Attleboro / Norton / Taunton	Mon - Sat	5:00 AM – 7:15 PM	30 peak, 80 offpeak	8:30 AM - 6:00 PM	60
24	Fixed Route	Attleboro Taunton	Attleboro / Pawtucket, RI	Mon - Fri	5:30 AM – 6:30 PM	60	–	–
140	Fixed Route	Attleboro Taunton	Route 140 / Wheaton T Shuttle	Mon - Sun	6:15 AM - 11:15 PM	30 peak, 90 offpeak	8:30 AM - 12:00 AM	60
Link 1	Fixed Route	Southeast	Wareham/ Onset / Wareham	Mon - Sat	8:00 AM – 5:00 PM	60	9:00 AM - 5:00 PM	
Link 2	Fixed Route	Southeast	Cranberry Plaza to Buzzards Bay	Mon - Sat	8:00 AM – 5:00 PM	60	9:00 AM - 4:30 PM	60

Route	Service Type	Service Area	Description	Days Operated	Weekday Service Span	Weekday Service Frequency	Saturday Service Span	Saturday Service Frequency
Link 3	Fixed Route	Southeast	Shangri-La to Cranberry Plaza	Mon - Fri	11:00 AM – 2:15 PM	60	–	–
Link 4	Fixed Route	Southeast	Cranberry Plaza to West Wareham	Mon - Sat	8:00 AM – 5:00 PM	60	9:30 AM - 3:30 PM	60
SAIL	Fixed Route	Northeast	Marshfield / Duxbury / Kingston	Mon - Sat	6:00 AM – 6:30 PM	60	8:30 AM - 5:30 PM	90
Mayflower	Fixed Route	Northeast	Mayflower Link	Mon - Sat	7:00 AM – 5:00 PM	60	9:00 AM - 5:45 PM	60
Freedom	Fixed Route	Northeast	Freedom Link	Mon - Sat	6:30 AM – 5:00 PM	60	10:00 AM - 5:15 PM	60
Liberty	Fixed Route	Northeast	Liberty Link	Mon - Sat	6:30 AM – 6:00 PM	60	8:30 AM - 5:30 PM	60
MC	Deviated Route	Northeast	Manomet/Cedarville Deviated Link	Mon - Sat	7:30 AM – 5:00 PM	60	9:30 AM - 5:15 PM	60
FAB	In-town shuttle	Northwest	Franklin Area Bus	Mon - Sat	6:45 AM – 5:00 PM	61	8:15 AM - 5:15 PM	80
MDS	In-town shuttle	Southeast	Middleboro Downtown Shuttle	Mon - Fri	8:00 AM – 4:30 PM	60	–	–
Medway	Commuter Shuttle	Northwest	Medway Commuter Shuttle	Mon - Fri	4 AM, 3 PM	30 peak	–	–
Pembroke	Commuter Shuttle	Northeast	Pembroke Shuttle	Mon - Fri	2 AM, 3 PM	60 AM 40 PM	–	–
Bellingham	Commuter Shuttle	Northwest	Bellingham Commuter Shuttle	Mon - Fri	3 AM, 3 PM	varies	–	–
WL	Commuter Shuttle	Southeast	Wareham/Lakeville Train Connector	Mon – Fri	4 AM, 4 PM	varies	–	–

3.2 Ridership

3.21 System Ridership

GATRA's annual ridership was 828,000 passengers in FY 2012, 845,000 in FY 2013, and 855,000 in FY 2014. Ridership increased two percent between FY 2012 and 2013 and one percent between FY 2013 and FY 2014, for an overall gain of three percent. Figure 2 shows average GATRA monthly ridership. GATRA averages 70,000 passengers each month. Average monthly ridership has remained relatively stable over the last three fiscal years. Ridership drops slightly during the winter months and is highest in the fall and spring months due in part to high school and college populations.

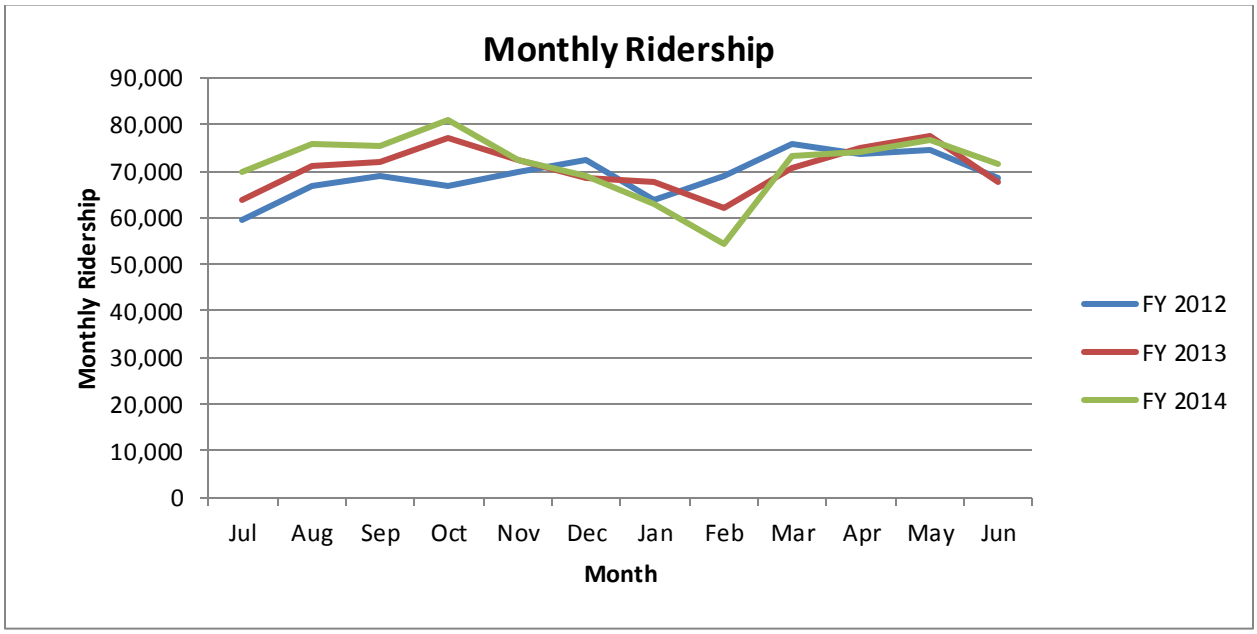


Figure 2. GATRA Monthly Ridership

3.22 Weekday Ridership

Average daily weekday system ridership is 3,000 passengers. By geographic area, Routes 8, 10, and 12 have the highest ridership in the Attleboro/Taunton region, while Link 1 has significantly higher ridership over other routes in the Southeast region. Attleboro/Taunton routes average 127 passenge rs; Southeast routes average 64 passengers; Northeast routes average 94 passengers; and Northwest routes average 34 passengers. Figure 3 shows the average weekday ridership by route for FY 2014. Routes with low ridership are peak only commuter services, such as Route 3 and the Pembroke and Bellingham Commuter Rail shuttles.

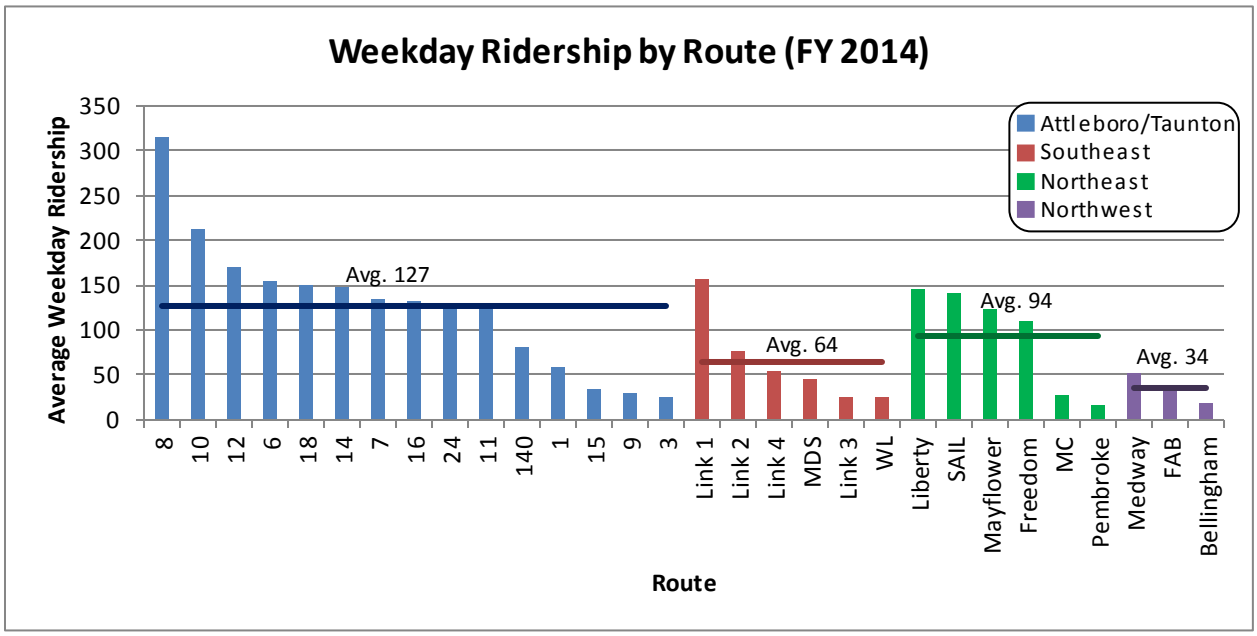


Figure 3. GATRA Weekday Ridership by Route (FY 2014)

Figure 4 shows the percent change in daily average ridership from FY 2012 to FY 2014. All routes were in operation between FY 2012 and FY 2014. In the Attleboro/Taunton region, nine routes experienced ridership growth, with Route 3 having a large increase in ridership of 92 percent. This route was introduced in FY 2011 and had a low ridership of 13 in FY 2012. The ridership growth is expected for a relatively new route with low initial ridership. Five routes experienced ridership loss, with Route 1 having the largest loss in the Attleboro/Taunton region with a 23 percent drop. Staff has correlated this reduction with the closure of the Shaw's supermarket in Plaza 44 along the route. For the southeast region, two routes experienced large changes in ridership, with Link 3 experiencing a 37 percent increase in ridership and the Wareham/Lakeville Train Connector carrying 35 percent fewer riders in FY 2014 than FY 2012. All routes in the Plymouth region experienced ridership growth, while the SAIL experienced some ridership loss and the Pembroke shuttle had a 21 percent drop in ridership. With a daily ridership of 15 for the Pembroke shuttle, any small change in ridership would be greatly magnified in the northwest all routes experienced ridership gain, with the Bellingham commuter rail shuttle experiencing the largest gain at 27 percent.

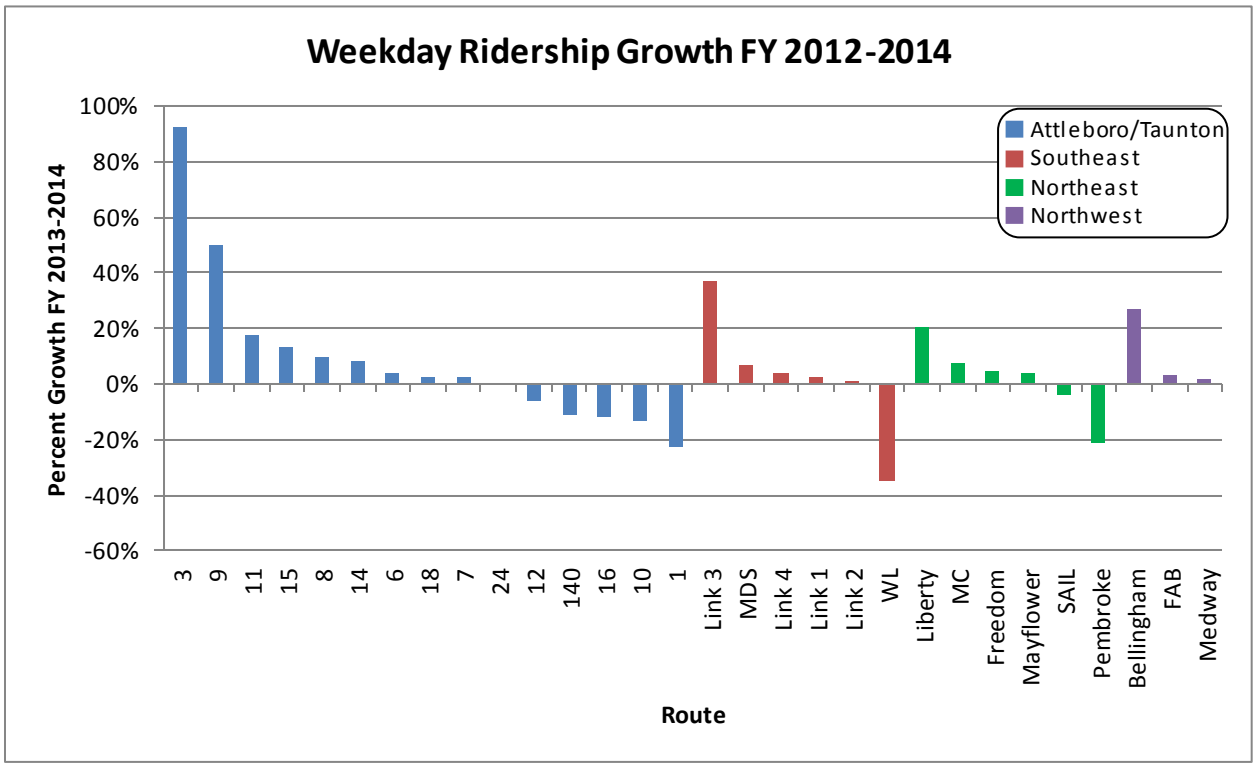


Figure 4. GATRA Weekday Ridership Growth, FY 2012 to FY 2014

3.23 Saturday Ridership

Ridership is lower on Saturdays than on weekdays, with overall Saturday ridership at 1,600 passengers. Several routes are weekday only routes, including the Bellingham, Medway, Pembroke, and Wareham/Lakeville commuter rail shuttles. The routes which do run on Saturdays also typically have shorter service spans compared to weekday service. Currently only one route, Route 140, operates on Sundays, but ridership data was not separated between Saturdays and Sundays, so ridership for Route 140 on both weekend service days was included in this calculation. As on weekdays, Routes 8, 10, 12, and Link 1 carry the most riders. These four routes account for 36 percent of ridership on Saturdays. Figure 5 shows average Saturday ridership by route.

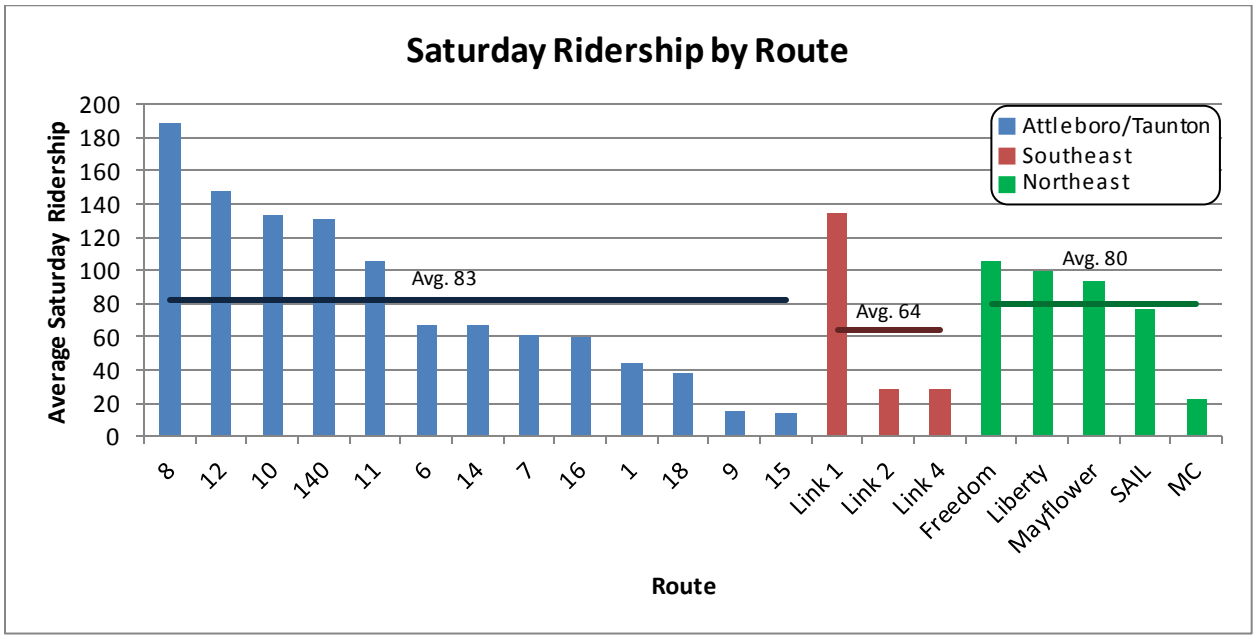


Figure 5. GATRA Saturday Ridership by Route

Like weekday ridership, Saturday ridership increased overall from FY 2012 to FY 2014. Saturday ridership growth is shown in Figure 6. In the Attleboro/Taunton region, five routes experienced ridership growth, while seven routes decreased in ridership. The Mansfield College connection to Commuter Rail and shops had the largest increase at 19 percent while Route 16 experienced the largest ridership decline at 23 percent. No routes had ridership decline in the Southeast and Northeast regions. The primary Wareham bus, Link 1, had the largest growth in the Southeast region with a Saturday ridership gain of 32 percent, while the Manomet/Cedarville route had the largest ridership gain in the Northeast region with a gain of 35 percent.

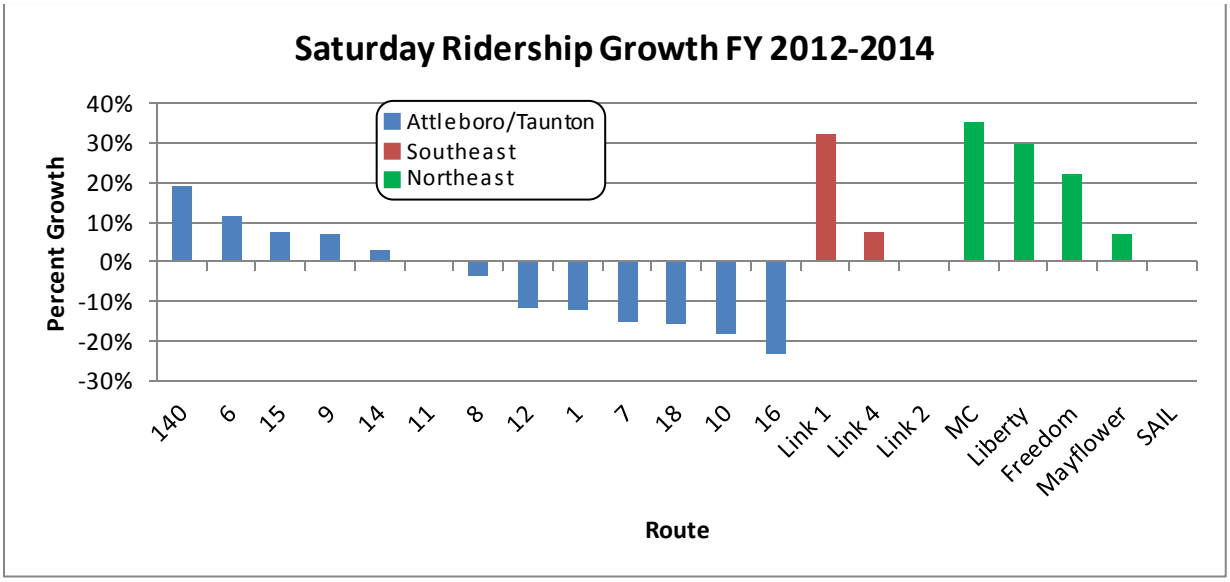


Figure 6. GATRA Saturday Ridership Growth, FY 2012 to FY 2014

3.3 Service Operations

3.31 Revenue Hours

GATRA operates more than 90,000 revenue hours each year with a monthly average of 7,500 hours, as shown in Figure 7. As no new service was introduced over the three year period, the number of revenue hours has not significantly changed. There is also no seasonality in the provided service, so the amount of service does not significantly vary by month either. Overall GATRA provided 4 percent less service between FY 2012 and FY 2014, with the reductions occurring on Plymouth services in October 2012 (FY 2013), a likely result of temporary service suspensions from Hurricane Sandy.

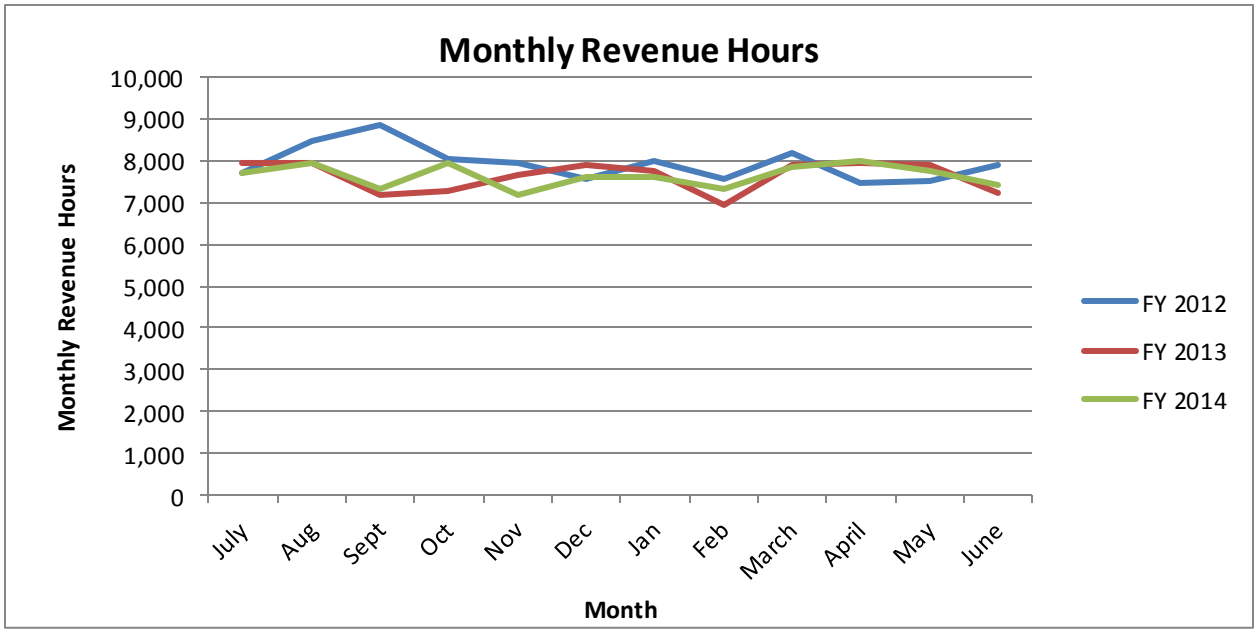


Figure 7. GATRA Monthly Revenue Hours

3.32 Revenue Miles

Revenue miles increased one percent from FY 2012 to FY 2013 and six percent from FY 2013 to FY 2014, for an overall increase of seven percent from FY 2012 to FY 2014. From FY 2012 to FY 2014, weekday revenue miles increased by one percent while Saturday miles did not change. Figure 8 shows the monthly trends in revenue miles for the past three fiscal years.

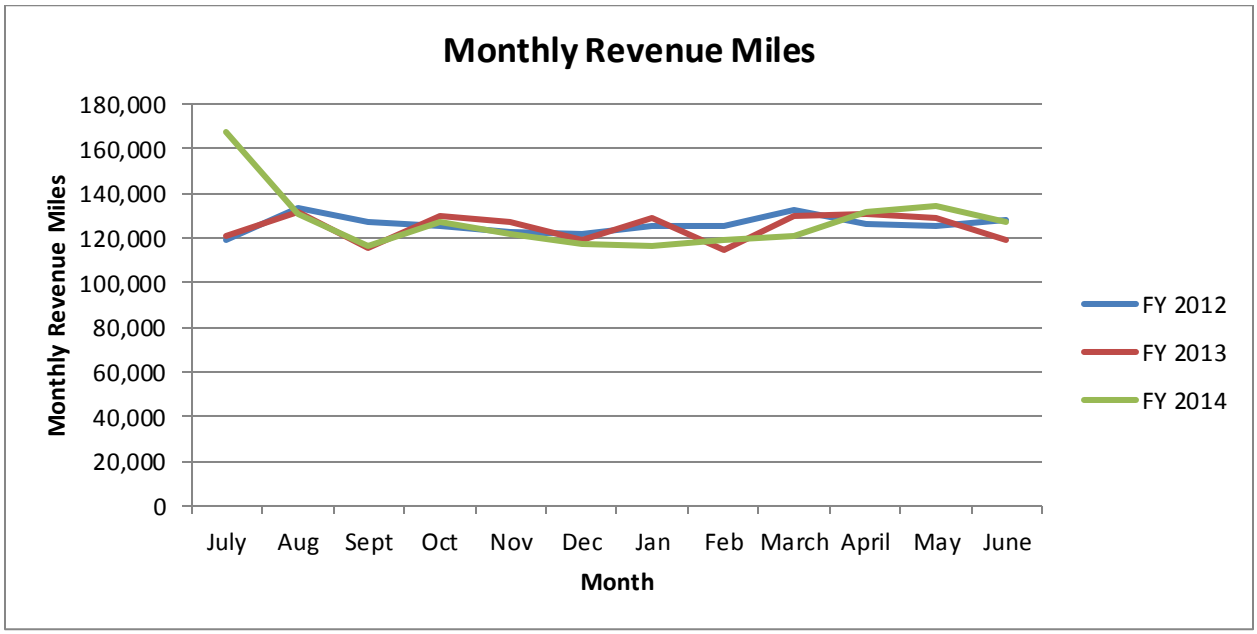


Figure 8. GATRA Monthly Revenue Miles

3.33 Operating Costs

GATRA operations cost $6.5 million annually with a monthly average around $600,000. According to internal reports, GATRA local buses had an hourly operating cost of $79.55 per revenue hour in 2012 and $80.45 per revenue hour in 2013. Figure 9 shows the monthly trends in operating costs for the past three fiscal years, which are highly correlated to revenue hours of service.

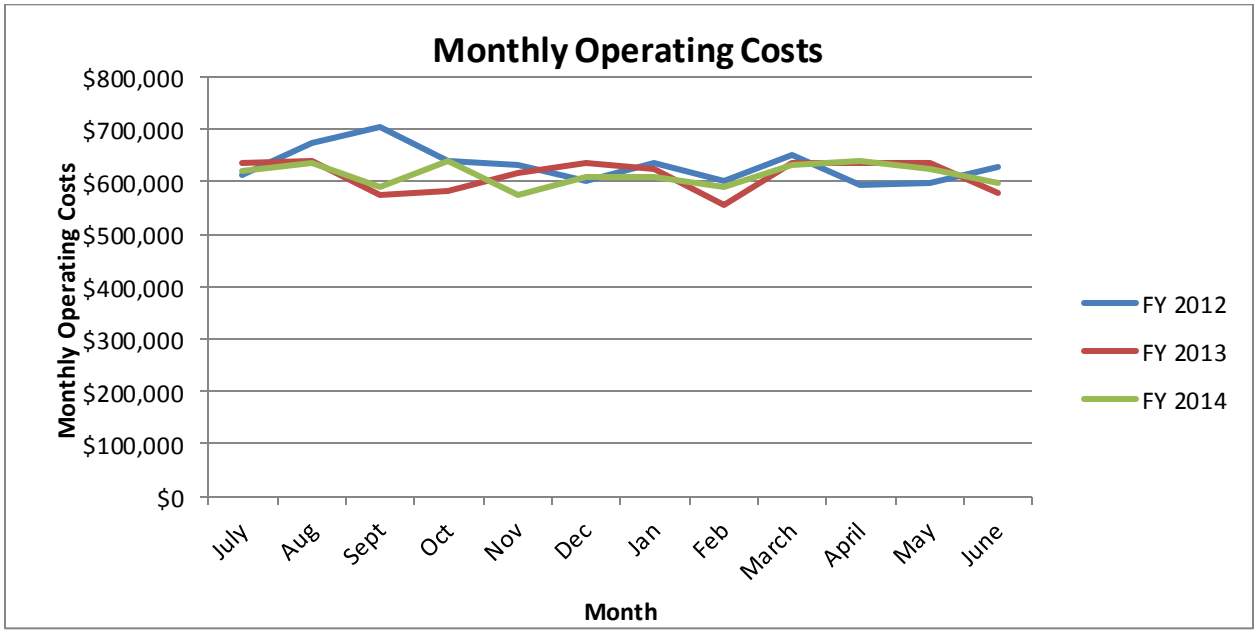


Figure 9. GATRA Monthly Operating Costs

3.4 Service Productivity

3.41 System Productivity

Productivity measures the ridership generated per unit of service – in this instance, revenue hours of service – and provides an understanding of the effectiveness of a route or transit network. Figure 10 shows GATRA's monthly productivity in passengers per revenue hour over the last three fiscal years.

GATRA has experienced little change in service productivity on a revenue hour basis. Productivity was 10.1 passengers per revenue hour in FY 2012, 10.4 in FY 2013, and 10.4 in FY 2014. Figure 10 depicts the monthly variations in service productivity, with productivity highest in the fall and spring seasons. All changes in productivity are attributed solely to changes in ridership as no new service was introduced in the timeframe of this study. GATRA currently has no service standard set for productivity.

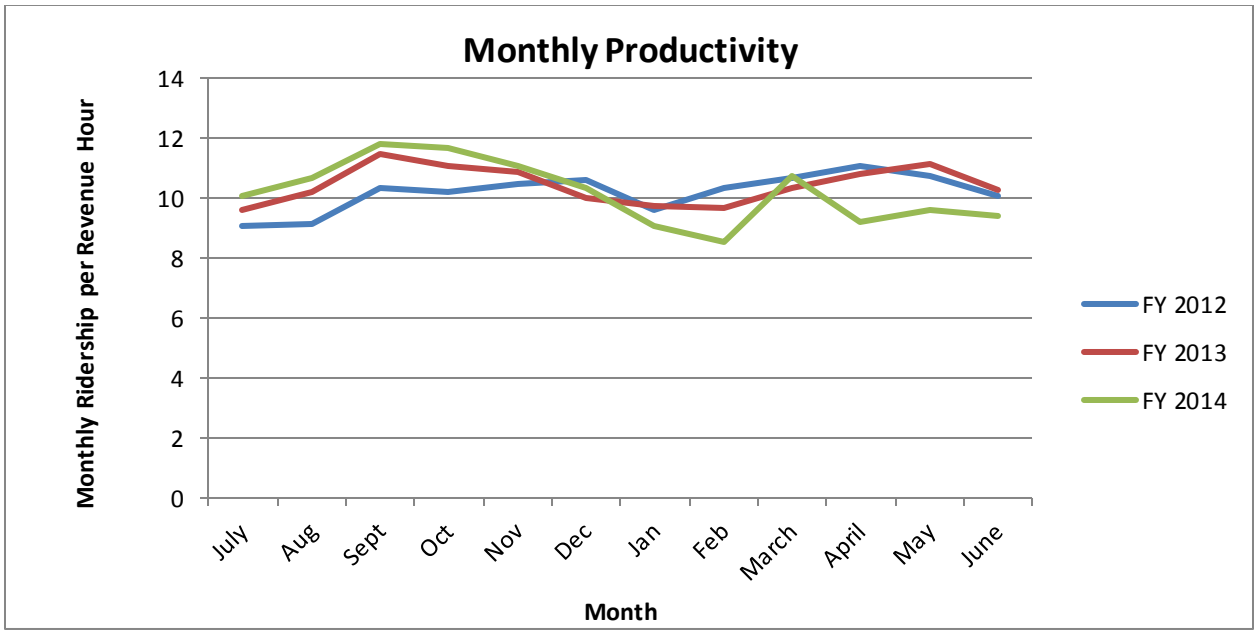


Figure 10. GATRA Monthly Ridership per Revenue Hour

3.42 Weekday Productivity

GATRA routes exhibit a wide range of performance as shown in Figure 11. The route with the highest productivity is the Medway Commuter Rail shuttle with 36.4 passengers per revenue hour while the route with the lowest productivity is Wareham/Lakeville Train Connector with 2.9 passengers per revenue hour. By geographic area, Attleboro/Taunton routes have an average weekday productivity of 12.0 passengers per revenue hour, Southeast routes average 9.7 passengers per revenue hour, the Northeast routes average 8.5 passengers per revenue hour, while the Northwest routes average 15.4 passengers per revenue hour. The four highest ridership routes (Routes, 8, 10, 12 and Link 1) all averaged over 15 passengers per revenue hour.

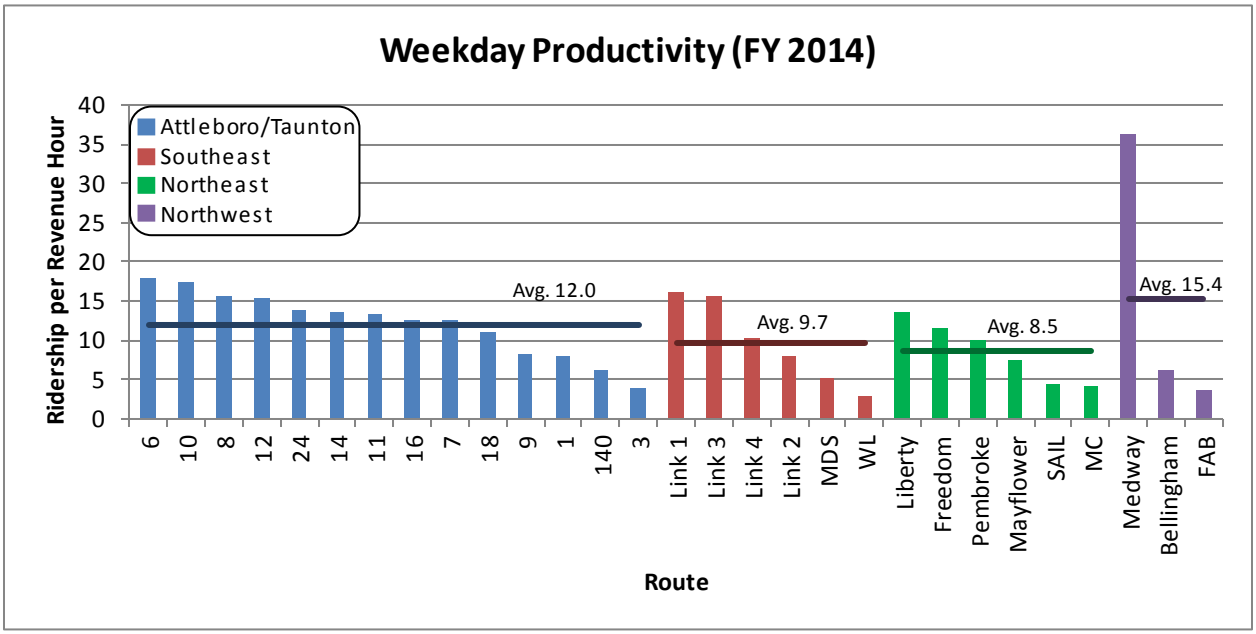


Figure 11. GATRA Weekday Productivity by Route

Figure 12 shows the percent change in productivity from FY 2012 to FY 2014 for routes in operation all three years. As there was little change in the revenue hours provided on each route, the weekday productivity change from FY 2012 to FY 2014 mirrors the change in ridership. Route 3 had the largest productivity gain at 87 percent, while Link 3 and the Bellingham commuter rail shuttles both had over 25 percent gains in productivity. Route 1 and the Wareham Lakeville Train Connector both experienced declines in productivity of over 20 percent.

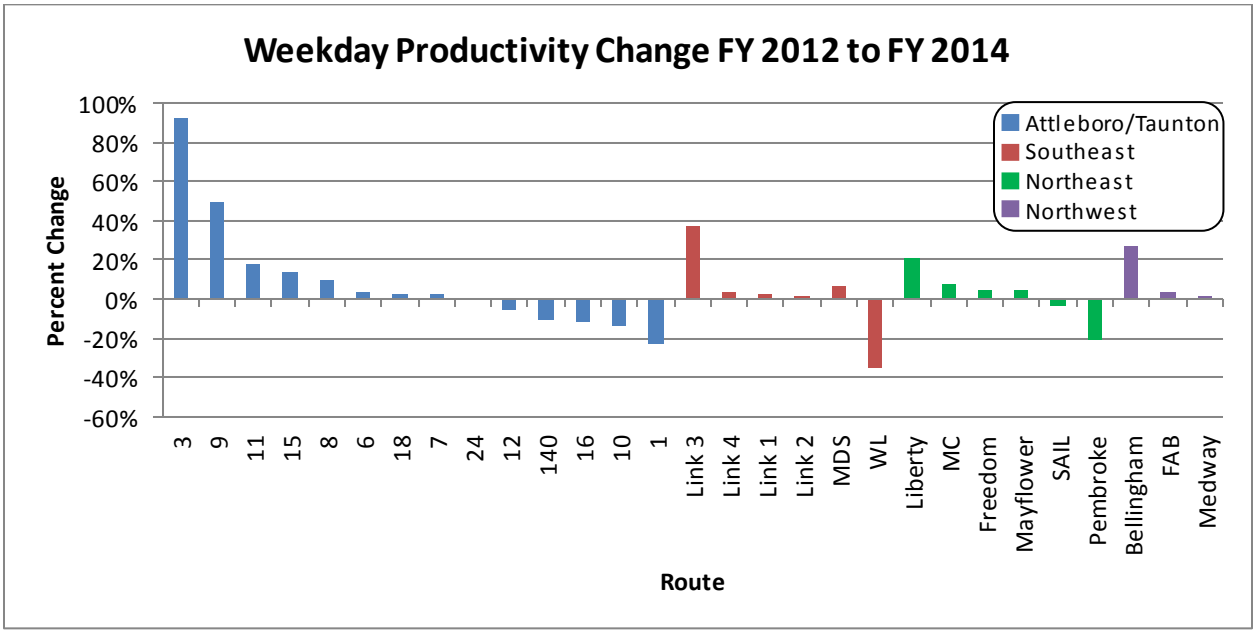


Figure 12. GATRA Weekday Productivity Change FY 2012 to FY 2014

3.43 Saturday Performance

Saturday routes have similar performance to weekday routes. Average Saturday productivity for Attleboro/Taunton routes is 11.2 passengers per revenue hour, while Southeast routes carry 10.6 passengers per revenue hour and Northeast routes carry 8.3 passengers per revenue hour. Route 12 has the highest productivity with 20.2 while SAIL has the lowest with 4.1 passengers per revenue hour. Figure 13 shows average Saturday productivity by route.

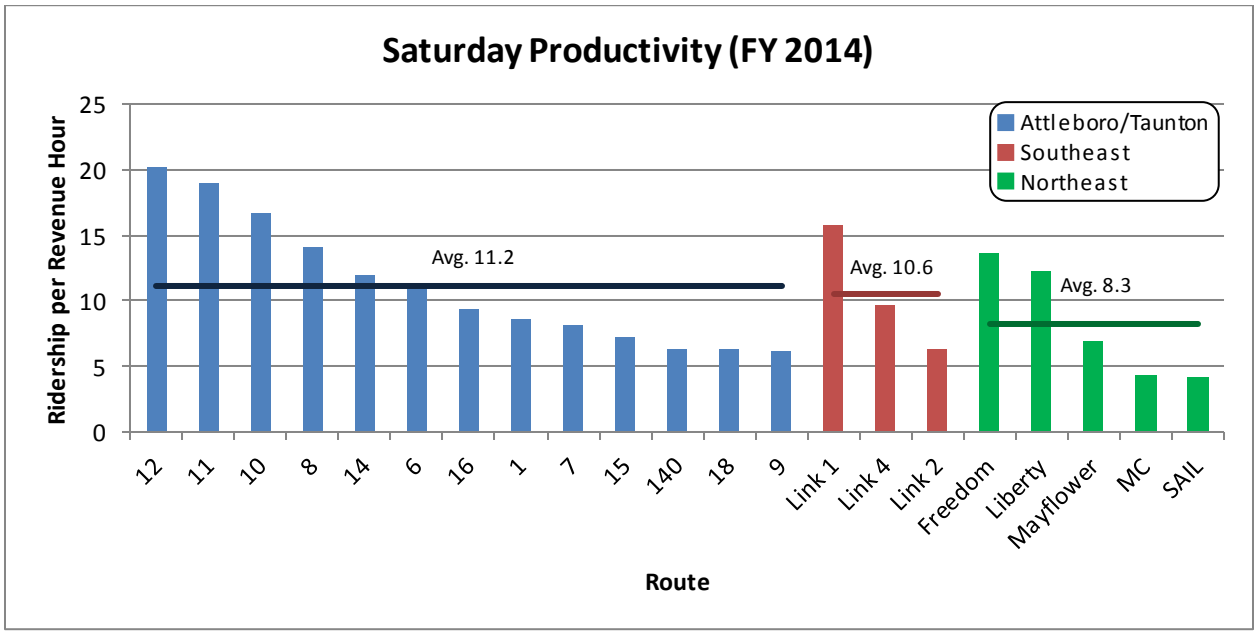


Figure 13. GATRA Saturday Productivity by Route

By route, 52 percent of routes experienced an increase in ridership, while one third of routes experienced a loss in ridership. These ridership drops were only in the Attleboro / Taunton service area and are directly correlated with the drops in ridership along these routes. Figure 14 shows changes in productivity by route between FY 2012 and FY 2014.

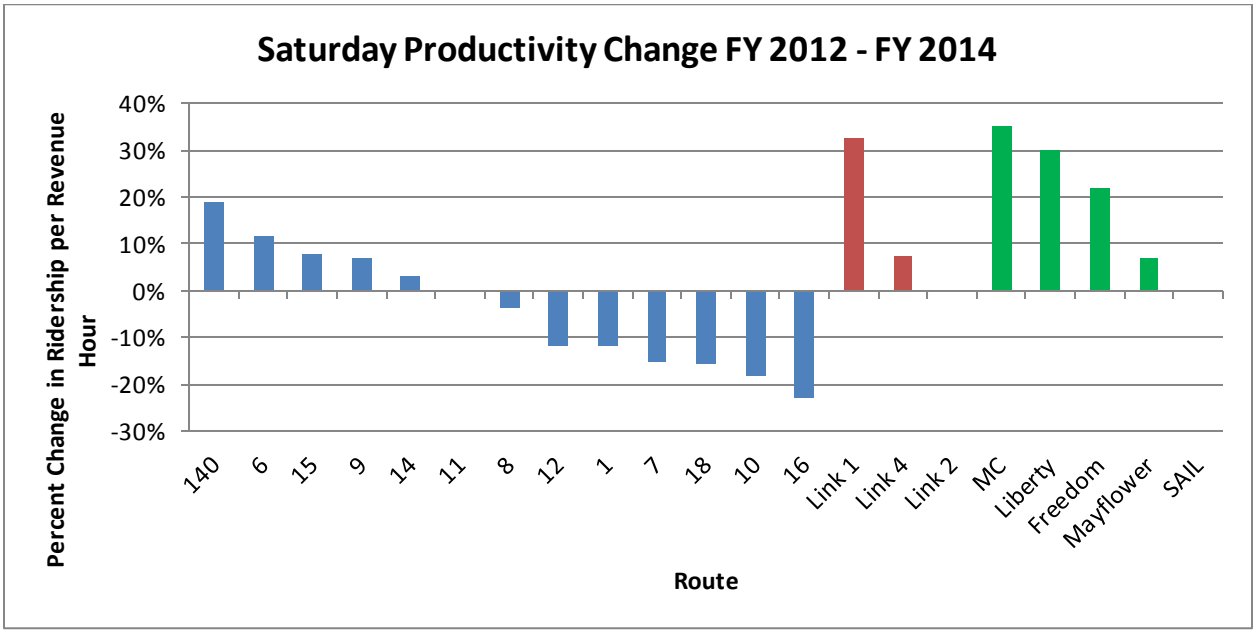


Figure 14. GATRA Saturday Productivity Change, FY 2012 to FY 2014

3.5 Financial Performance

3.51 System Farebox Recovery Ratio

The farebox recovery ratio is the ratio of fare revenue to operating costs. Higher ratios indicate higher cost-effectiveness and measure the portion of operating costs covered by passenger fares. The higher the farebox recovery ratio, the lower the subsidy a route needs to operate, leaving more revenue available to operate more service. Figure 15 shows that farebox recovery has increased slightly over the past three fiscal years. The average farebox recovery ratio was 7.9 percent in FY 2012, 8.5 percent in FY 2013, and 8.2 percent in FY 2014.

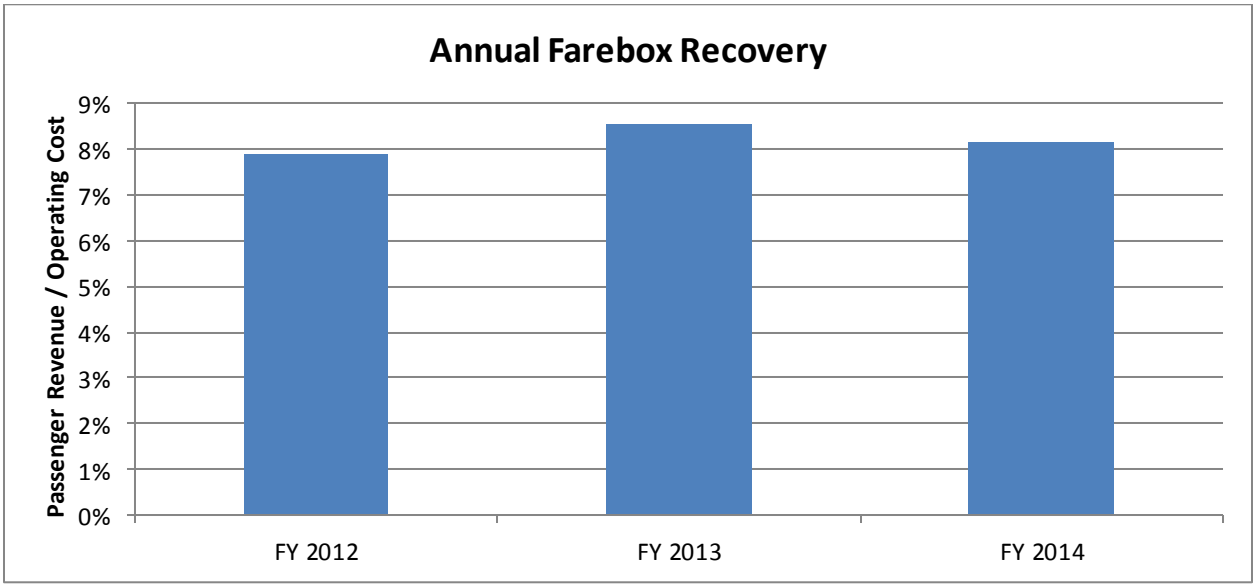


Figure 15. GATRA Annual Farebox Recovery

3.52 System Subsidy per Passenger

Subsidy per passenger measures how much it costs to operate transit service for every passenger carried. It is calculated by subtracting passenger revenue from operating cost and dividing by the total number of passengers. Lower passenger subsidy values indicate that a greater portion of operating costs are recovered through passenger fares, and are more desirable for financial sustainability.

Figure 16 shows that subsidy per passenger has decreased slightly over the past three fiscal years. The average subsidy per passenger was $7.41 in FY 2012, $7.06 in FY 2013, and $7.05 in FY 2014.

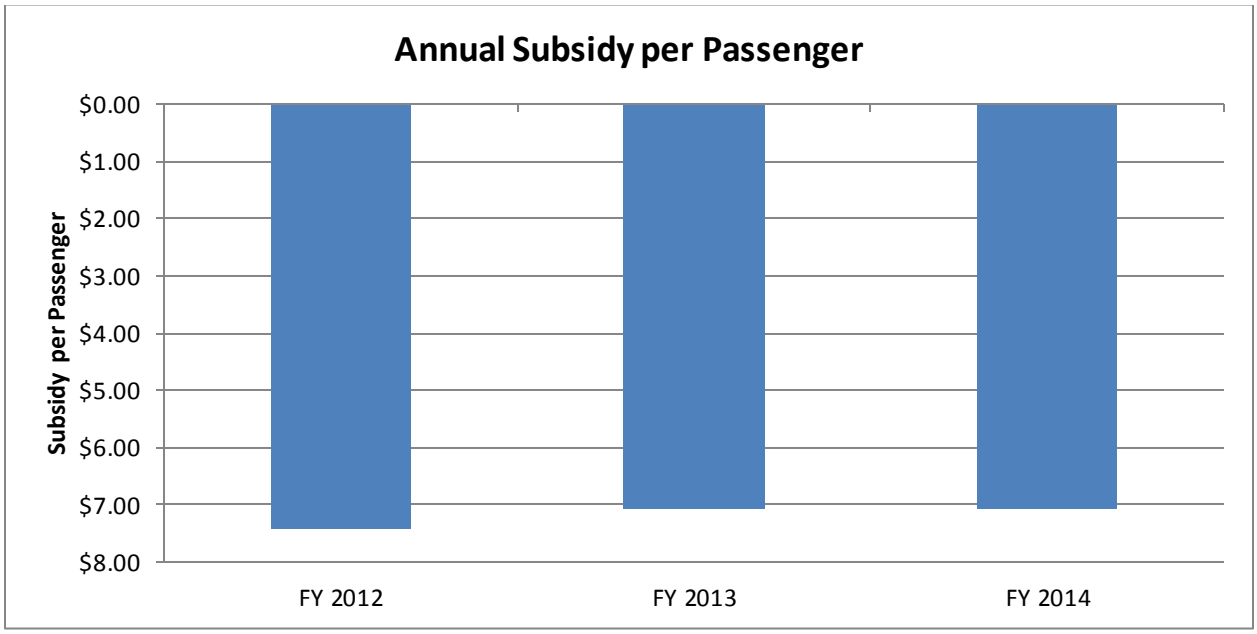


Figure 16. GATRA Annual Subsidy per Passenger

3.53 Weekday Subsidy per Passenger

Average weekday subsidy per passenger is $7.01 for routes operating in Attleboro and Taunton, $11.30 for Southeast routes, $10.93 for Northeast routes, and $11.83 for Northwest routes. The Medway shuttle has the lowest subsidy of all routes GATRA operates, at $1.30 per passenger, while the Wareham/Lakeville Train Connector has the highest subsidy at $26.76 per passenger. Several other routes also have subsidies that exceed $15 per passenger, including Route 3, the Middleborough Downtown Shuttle, SAIL, the Manomet / Cedarville Deviated Link, and the Franklin Area Bus. These should be further evaluated to better determine efficiencies. Routes that run in suburban areas typically were better performing, while long distance routes and small town circulators had high subsidies. Figure 17 shows average subsidy per passenger by route on weekdays.

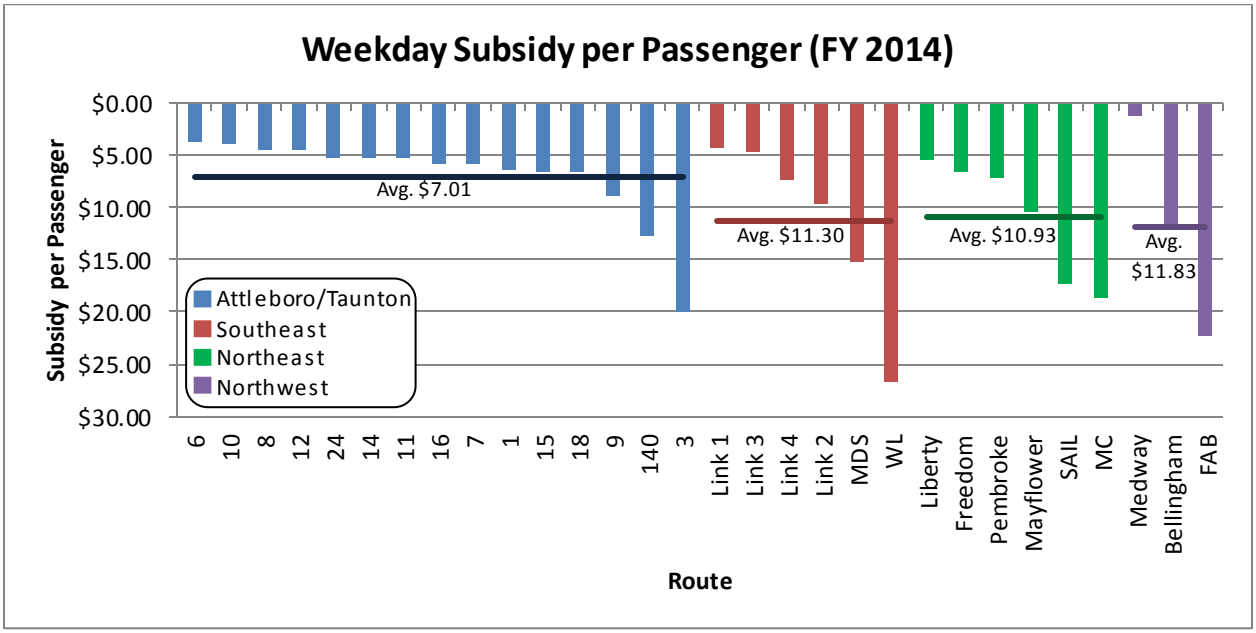


Figure 17. GATRA Weekday Subsidy per Passenger

3.54 Saturday Subsidy per Passenger

Average Saturday subsidy per passenger is similar to that of weekday routes, with Attleboro and Taunton routes having an average subsidy of $7.80. Routes in the Southeast and Northeast have higher subsidies of $8.14 and $11.94 respectively. Route 12 has the lowest subsidy of $3.29 and SAIL has the highest subsidy of $19.03. Subsidies were lower in the Southeast region on Saturdays compared to weekdays, as the two Southeast routes with the highest subsidies are weekday only routes. Figure 18 shows average Saturday subsidy per passenger by route in FY 2014.

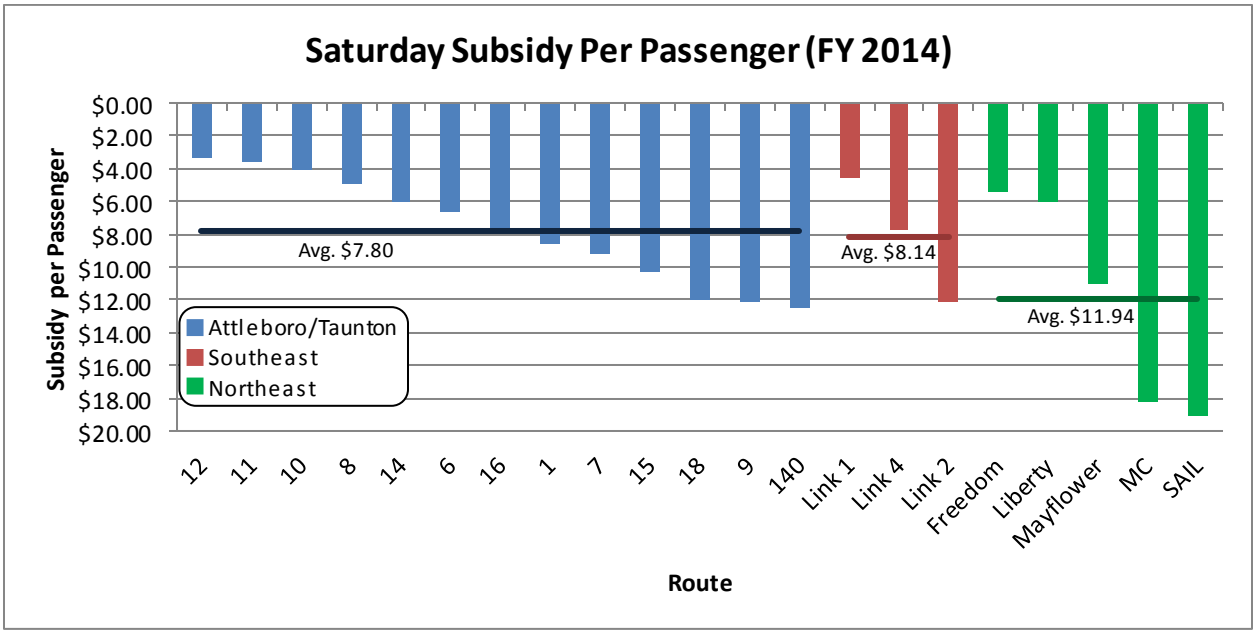


Figure 18. GATRA Saturday Subsidy per Passenger

3.6 Ranking of Weekday Route Performance

In order to evaluate investment priorities, the routes were given a score based on how their performance compared with system averages, regardless of service type. Routes were scored based on ridership, passengers per revenue hour, and subsidy per passenger. For each route, each performance indicator was evaluated as a percentage of the system average. For example, if the system average was 100 passengers and a given route has 200 passengers, it would score 200% for that category. The composite score was calculated by taking the averages of the percentages for each category. The routes were then divided into four tiers based on their composite score: Highest performers (150% or greater), above average performers (149%-100%), below average performers (99%-50%), poor performers (49% or lower). Table 3 shows each route in GATRA and its composite score and ranking.

Table 3. GATRA Weekday Route Performance Ranking

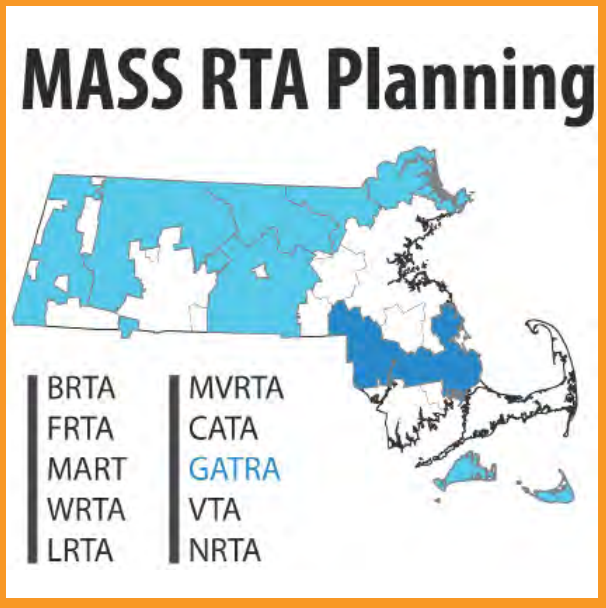
Rank	Route	Route Description	Score
1	Medway	Medway Commuter Shuttle	261%
2	8	E. Taunton / Raynham Wal-Mart	156%
3	10	Attleboro / North Attleboro	150%
4	6	Whittenton	146%
5 (Tie)	Link 1	Wareham / Onset / Wareham	131%
5 (Tie)	12	Attleboro / So. Attleboro / No. Attleboro	131%
7	14	Attleboro / No. Attleboro / Plainville	115%
8	Liberty	Liberty Link	110%
9	24	Attleboro / Pawtucket, RI	109%
10	11	South Attleboro Connector	108%
11	Link 3	Shangri-La to Cranberry Plaza	104%
12	7	School St. / Route 44 / Taunton / Raynham	103%
13	16	Attleboro / Seekonk	101%
14	18	Attleboro / Norton / Taunton	93%
15	Freedom	Freedom Link	88%
16	15	Oak Hill	76%
17	Link 4	Cranberry Plaza to West Wareham	73%
18	Mayflower	Mayflower Link	68%
19	Pembroke	Pembroke Shuttle	66%
20	Link 2	Cranberry Plaza to Buzzards Bay	60%
21	1	Westside	59%
22	9	Weir/ Route 138	57%
23	SAIL	Marshfield / Duxbury / Kingston	52%
24	140	Route 140 / Wheaton T Shuttle	50%
25	Bellingham	Bellingham Commuter Shuttle	42%
26	MDS	Middleboro Downtown Shuttle	38%
27	MC	Manomet / Cedarville Deviated Link	32%
28 (Tie)	3	Silver City/Myles Standish Industrial Park	29%
28 (Tie)	FAB	Franklin Area Bus	29%
30	WL	Wareham / Lakeville Train Connector	22%

Investment strategies for routes will vary based on their performance tier. The two routes with the highest performances are top priorities for service investment and may benefit from increased service frequencies or service spans. The other routes that perform above average are candidates for further service investment as resources become available.

For routes that perform below average, further analysis is required to determine what is causing the routes to have low performance. More in depth analysis could look at inefficiencies in route alignments, service frequencies and spans, and duplicity with other routes. Routes with exceptionally low performance may be candidates for discontinuation of service and will be examined in later sections.

3.7 Key Findings

- Overall, ridership increased between FY 2012 and FY 2014. Ridership increases were seen both in weekday ridership and in Saturday ridership.
- Routes 8, 10, 12, and Link 1 are the highest ridership routes in the system and account for nearly one third of system ridership.
- Daily average Saturday ridership is approximately half of daily average weekday ridership.
- GATRA has had few service changes over the last three fiscal years, so changes in service performance are primarily due to changes in ridership.
- Daily average service performance is lower on Saturdays than on weekdays, albeit not significantly.



Chapter 4

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GATRA
Greater Attleboro Taunton
Regional Transit Authority

4. DETERMINING DEMAND

In order to evaluate a transit system and identify possible ways to strengthen it, it is important to understand the surrounding market, how this market is evolving, and who the riders of the system are. Demographics, land use, and socioeconomics – all of which impact ridership – are constantly changing. To align service to meet the needs of these potential riders, it is important to understand the level of transit demand that they represent.

This chapter is divided into two parts. The first section examines regional job creation goals and employment needs to demonstrate the economic context of the region and to identify potential ridership growth areas. The second section seeks to determine how the current service offered by the Greater Attleboro-Taunton Regional Transit Authority (GATRA) aligns with its regional transit demand.

4.1 Regional Job Creation Goals and Employment Needs

This section will examine economic growth in the region to determine job creation goals and employment needs as well as the role transit plays in accommodating these needs. To determine the region's job creation goals and employment needs, the Strategic Plan of the Commonwealth of Massachusetts Executive Office for Housing and Economic Development (EOHED) was reviewed to examine the overarching goals for the state. The Southeastern Regional Planning and Economic Development District (SRPEDD) Fact Book and Comprehensive Economic Development Strategy, Old Colony Planning Council Comprehensive Economic Development Strategy and MetroBoston DataCommon were also reviewed to determine economic context and how the region is expected to grow as well as to identify major regional employers/industries. This information was supplemented by site visits and interviews with GATRA Staff.

4.11 EOHED Strategic Plan

The EOHED plays a crucial role in supporting the growth of the economy, vibrant communities, and competition for consumers and businesses. The office, led by the Secretary of Housing and Economic Development, is focused on steering Massachusetts towards smart growth, a development approach that recognizes the interactions between land use, energy, and transportation. To achieve this, the EOHED has outlined a three-year strategic plan that focuses on the following four goals:

1. Accelerated job creation;
2. Stabilized housing;
3. Enhanced consumer awareness; and
4. Improved regulatory solutions.

As the economy transitions from health care, higher education, technology, financial services, and tourism to one that includes life sciences, clean energy, and the creative economy, more jobs will be

added. Accelerating job creation in conjunction with compact land use development patterns that promote sustainability and increase the number of affordable housing units will change residential patterns and transportation needs. To serve the needs of the new emerging clusters of employment and housing, the transportation system as a whole must change and adapt. The new environments, which will be comprised of small and mid-sized businesses, must be served by public transit in order to meet the demands of the new workforce. While the public transit system must adapt to the changing economy, it should be noted that no two regions of the state are the same. As such, job creation goals and employment needs – and thus transportation needs – will differ.

4.12 Greater Attleboro-Taunton Economic Development

Mobility is paramount to a robust economy, and transit plays an important role in providing access to jobs for those without personal automobiles. In addition to serving these transit-dependent populations, easy to use public transit is also important for the region as a way to reduce traffic congestion and maintain a high quality of life, which contributes to attracting new businesses and employees. The communities within the GATRA service area have focused their business growth in "priority development areas," which are generally served by transit. Connections between transit and employment, however, remain challenging.

There are 28 communities in the Greater Attleboro-Taunton Region, ranging from suburban communities of 6,400 to urban areas of 56,000. Fifteen of the GATRA Region communities are within the SRPEDD service area. In addition, the GATRA service area includes 10 communities from the Metropolitan Area Planning Council (MAPC) region and three from the Old Colony Planning Council (OCPC). For communities that do not receive fixed-route service, GATRA contracts with the local Councils on Aging to provide services for the elderly and disabled.

The GATRA Region has a population of 570,000 and is expected to grow steadily through 2030. The Region's economic engines are the cities of Taunton, Attleboro and Plymouth, which account for 28% of the population. Taunton and Plymouth have slightly more than 56,000 residents each, while Attleboro has approximately 43,000. The GATRA Region is geographically located in the south east region of Massachusetts with easy access to Boston and Providence via Routes 24 and I-495 and I-95. This access combined with a large stock of affordable housing has made the region a bedroom community for individuals who work in the Metro Boston region. Income indicators show that the region's median household and family income values are higher than the state and national averages.

The region's economy is constantly evolving. Currently there are approximately 231,000 jobs in the region with the largest contributors being Taunton and Plymouth who collectively employee 22.3% of the regions workforce. Unemployment rates for the region have followed similar trends to that of the state and country but have tended to be higher than the averages. Although the SPREDD region experienced a decrease of 5.1% in the total number of jobs from 2006-2011, total employment rose 0.9% between 2011 and 2012. OCPC communities have experienced similar trends. This suggests the start of an economic rebound for the region, which is supported by projections for 2035 that show

regional employment increasing to 265,000 jobs for SPREDD communities (an increase of 14.3%), and an increase of 35,000 jobs for OCPC communities (an increase of 13%)[1].

The Southeastern Region of Massachusetts has a diverse employment base. SPREDD primary business clusters include health care and social assistance (17.3% of 2012 employment), retail trade (15.9%), manufacturing (12.1%), and accommodation and food services (9.4%). The largest clusters in OCPC communities have been health care and social assistances. MAPC communities are divided into regions and GATRA communities fall into three different regions but all support cluster development. The southwest MAPC region primary clusters are trade, transportation and utilities (22.9%) and Education and health care (19.3). South Shore clusters include Education and health care (24.7%) and trade, transportation and utilities (22.1%). Foxborough is the sole GATRA community who is part of the Three Rivers Inerlocal Council. The largest employment sectors for Foxborough are leisure (32.1%) and Professional services (19.4%). While the clusters vary throughout the region healthcare and retail (leisure) tend to be high amongst all communities.

The general growth of the region throughout the last 50 years was accelerated by the rail connections to Boston with the restoration of the Old Colony Lines in the mid 1990's and improvements to the Providence/Stoughton Line. There are eleven current commuter rail stations in the region. The growth in rail service further demonstrates that many people commute out of the region to work. As the rail service changes, so must the fixed-route bus options in order to provide feeder trips to and from the station.

Priority Development Areas

In 2013, the Southeastern Regional Planning and Economic Development District (SRPEDD) updated its list of Priority Development Areas (PDAs) for the municipalities associated with the South Coast Rail Corridor Plan area. These areas were identified as having development or redevelopment potential for housing opportunities and economic growth that would benefit the region. Two hundred fifty development areas were identified and evaluated based on six criteria: travel choices, walkable communities, open spaces, healthy watersheds, current assets, and growth potential. Within travel choices, proximity to transit and percent of non-auto commuters were among the variables examined. OCPC identified several PDAs as part of their regional PDA/PPA project in 2010 and MAPC maintains a development database of projects that identifies growth areas. These processes resulted in the identification of thirty-one PDAs within the GATRA service area (Table 4).

[1] This data was not available for individual MAPC communities

Table 4. Priority Development Areas

Municipality	Priority Development Area	Acres
Attleboro	Downtown Attleboro	90.63
Duxbury	Millbrook Crossing	4
Foxborough	Downtown / Invensys Growth Node	155.72
Foxborough	Route 1 Growth Node	722.35
Franklin	122 Chestnut Street	N/A
Franklin	Franklin Sports Complex	N/A
Franklin	Pond Street Priority Development Site (43D)	N/A
Franklin	Forge Park Priority Development Site (43D)	N/A
Franklin	Franklin Industrial Park Priority Development Site (43D)	N/A
Kingston	Unknown	94.3
Lakeville	State Hospital Redevelopment	84.69
Mansfield	Cabot Business Park	644.26
Mansfield	Downtown Revitalization District	47.24
Mansfield	Station Revitalization District (TOD)	63.44
Marshfield	White's Ferry Landing	4
Marshfield	Proprietors Market Place	N/A
Marshfield	enterprise Park	110
Medway	Fox Run Farm	N/A
Middleborough	Development Opportunity and Commercial Development Districts	1,139.25
Middleborough	Downtown Economic Opportunity Area	108.31
North Attleborough	Downtown and TOD	43.37
Pembroke	Unknown	910
Plymouth	Unknown	4532
Raynham	Raynham Park and Ryan Drive	129.13
Raynham	Raynham Woods Business Park	314.91
Taunton	Dean Street TOD	23.03
Taunton	Downtown Taunton Business District	135.14
Taunton	Myles Standish Industrial Park	691.06
Taunton	Myles Standish Industrial Park Expansion and Life Science Center	245.84
Taunton	Target Station Site	70.18
Wrentham	Kenworth	4

Transit Supporting Business

Transit service is an important component of the region's economy, both for getting employees to jobs and for connecting people with training that would help them participate in future employment opportunities. GATRA currently serves most of the PDAs identified above. However, the 2013 Southeastern Massachusetts Comprehensive Economic Development Study (CEDS) acknowledges that a

robust transportation system is directly tied to quality of life and economic success. To this end, the CEDS identifies supporting the development of infrastructure as a goal focused on improving economic development because "private sector business formation depends upon the public sector to create and provide the physical amenities in the form of development sites, utilities, and transportation, to move goods and materials and enable workforce mobility." One of the challenges that GATRA faces is providing service to employees who work during the second shift. GATRA operates service during traditional hours, which does not correspond with any service and/or manufacturing jobs with evening and weekend shifts. Many of the riders are transit dependent and GATRA is their only transportation option for getting around.

4.2 Transit Market Analysis

Certain groups, such as older adults, the young, low income populations and those without access to a vehicle, are more likely to use transit, and quite often their trips are for work purposes. By analyzing and examining such factors as population density, vehicle availability, land use, and employment locations, an overall market and demand for transit in the region was established. To determine if service was currently deployed in the most effective way to accommodate the transit needs of the region's workforce, each route was overlaid on maps displaying employment and socio-economic data.

4.21 Transit Dependent Populations

Transit-dependent populations are those exhibiting socioeconomic and demographic characteristics that make them more likely to use public transit than others, such as level of income, access to a vehicle, and age. Transit systems are often designed with a focus on serving such populations. In addition, population and employment densities can also provide an indication to the feasibility of providing service. Industry standards indicate that at least 2,000 households are needed per square mile to support a fixed-route transit system. It is important to match the level of demand with the level of service in order to maximize not only the number of persons benefiting from transit service and but also the transit system's efficiency.

Older Populations

According to the American Public Transportation Association (APTA), individuals aged 65 and above represent the second largest transit user group. This group's high level of transit ridership, however, is disproportional to the relatively small percentage of the population that the group represents. Older adult population typically correlates with areas of low income levels and vehicle ownership. These individuals are often on fixed incomes reducing their desirability to own a vehicle; in addition health issues such as poor eyesight can deter them from driving. There appears to be no real pattern to where this age group tends to live in the GATRA service area (Figure 19). Thus, it can be challenging to institute

transportation services that meet their needs. Within the GATRA service area, 12.8% of the population is made up of individuals over the age of 65[2].

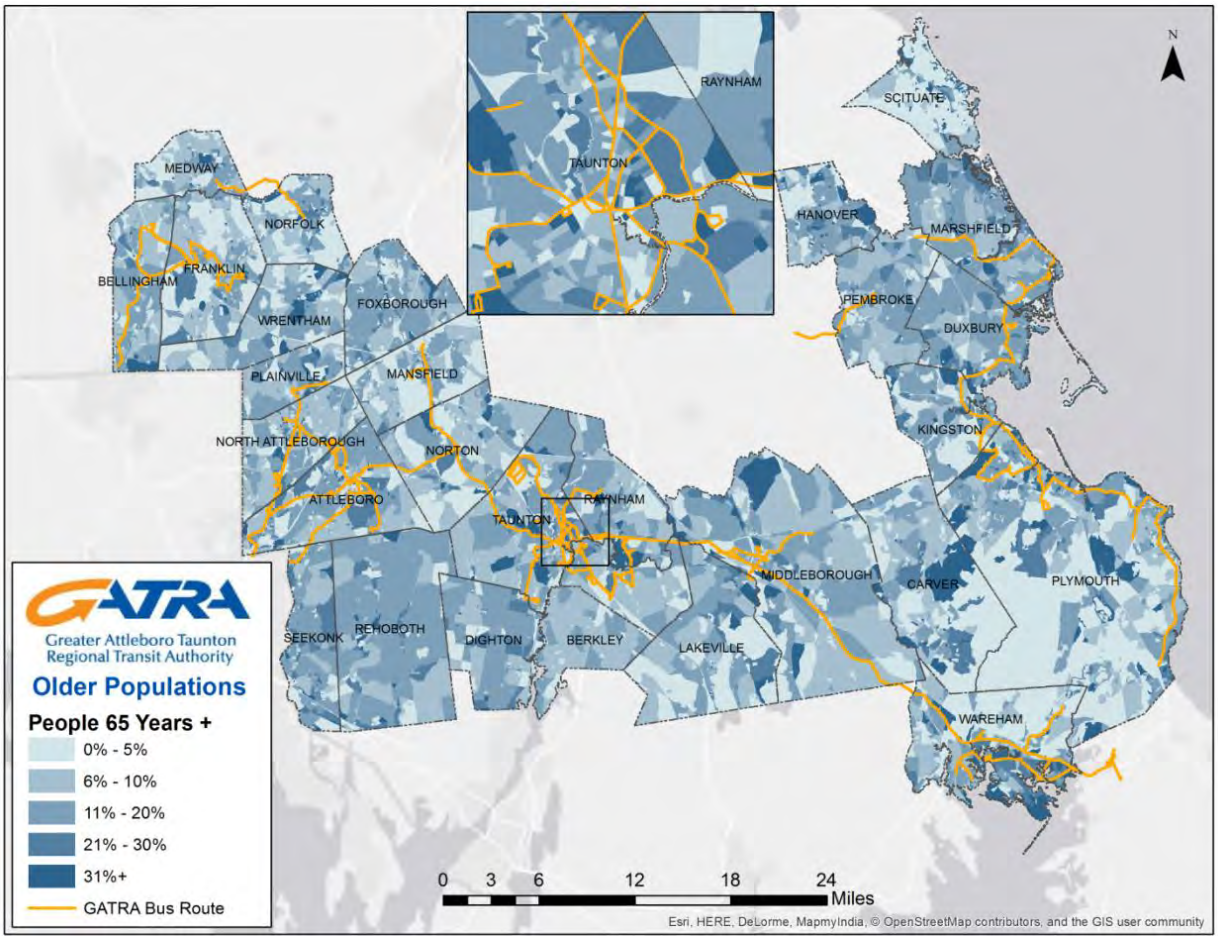

Figure 19. Older Populations

Population Density

The majority of trips (transit or non-transit) originate or end at the home, this makes population an important indicator of potential transit use. Population density is used in this analysis instead of the total population because it accounts for varying area sizes. By adjusting for size this makes it a better indicator of transit use. High density areas are typically found in urban centers consisting of multifamily units, mixed use developments, limited parking, and walkable environments all of which typically generate higher transit ridership. The average population density in the Greater Attleboro Taunton Region is 661 persons per square mile, which is lower than the state average of 858 persons per square mile. The densest areas are located in Taunton, with pockets of density in other communities as well.

[2] GATRA operates a Dial-a-Ride service for individuals age 60 and above

As shown on the following map (Figure 20), the majority of dense population areas are served by GATRA routes.

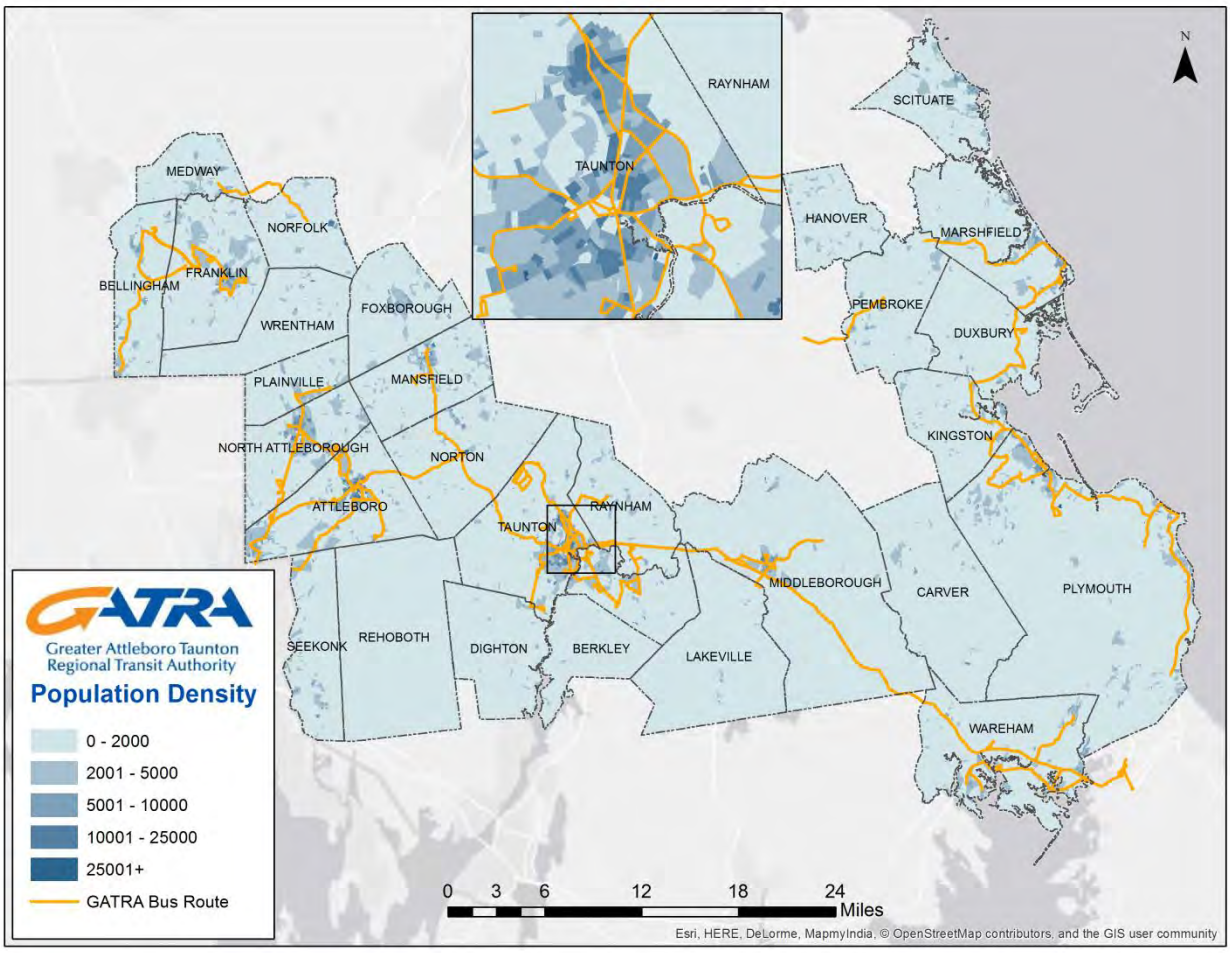

Figure 20. Population Density

Employment Density

According to the American Public Transportation Association (APTA), commuting for work purposes is the number one reason people take transit. As such, it is imperative that transit systems serve areas with high concentrations of employment. Within the GATRA service area, there are 230,826 jobs, which equates to an average of 266 jobs per square mile. These employment centers tend to be concentrated in the city centers or in industrial parks. Many of the dense employment areas are served by GATRA (Figure 21).

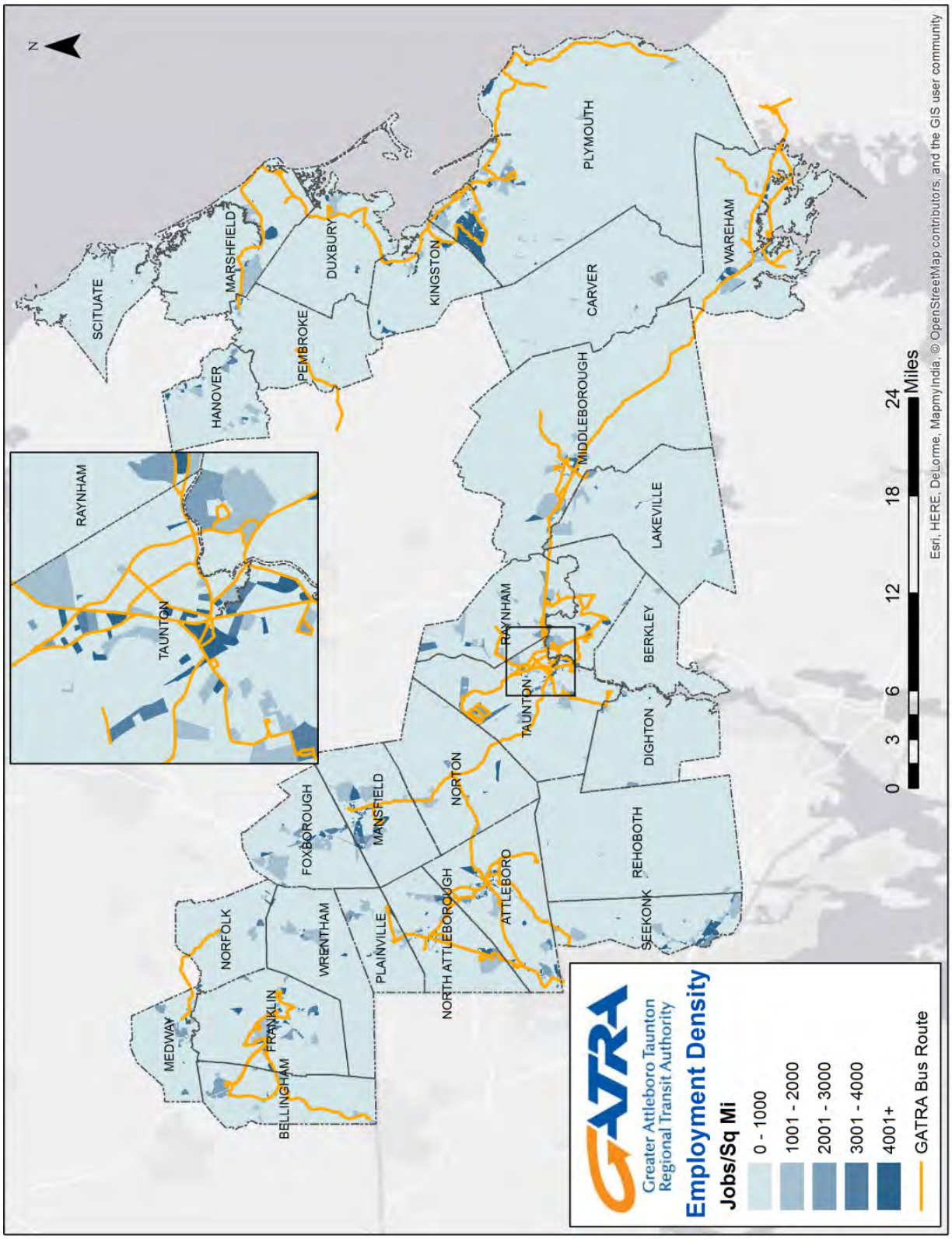

Figure 21. Employment Density

Home and work are the most common origin and destinations according to the American Public Transportation Association (APTA). Since population and employment densities are the best approximation for determining the level of demand these two variables have been combined to examine service frequencies based on thresholds[3]. As job and population densities increase the headway should decrease (Table 5). Densities above 250,000 are candidates for alternative modes such as bus rapid transit (BRT) or rail. Figure 22 indicates that the demand for more frequent service is concentrated in the urban cores of Attleboro, Taunton, Kingston, Mansfield, Franklin, North Attleborough and Foxborough.

Table 5. Frequency Thresholds

Jobs & Population per Square mile	Fixed-Route Headway
3,000-6,500	60 Min
6,501-16,000	30 Min
16,001-250,000	15 Min
250,001+	5 Min

[3] These estimates are based on of data from the *Urban Development Intensities in the Washington DC Metropolitan Area* by Terry Holzheimer, *Public Transportation and Land Use Policy by* Boris Pushkarev, *and TCRP Report 111 Elements Needed to Create High Ridership Transit Systems.*

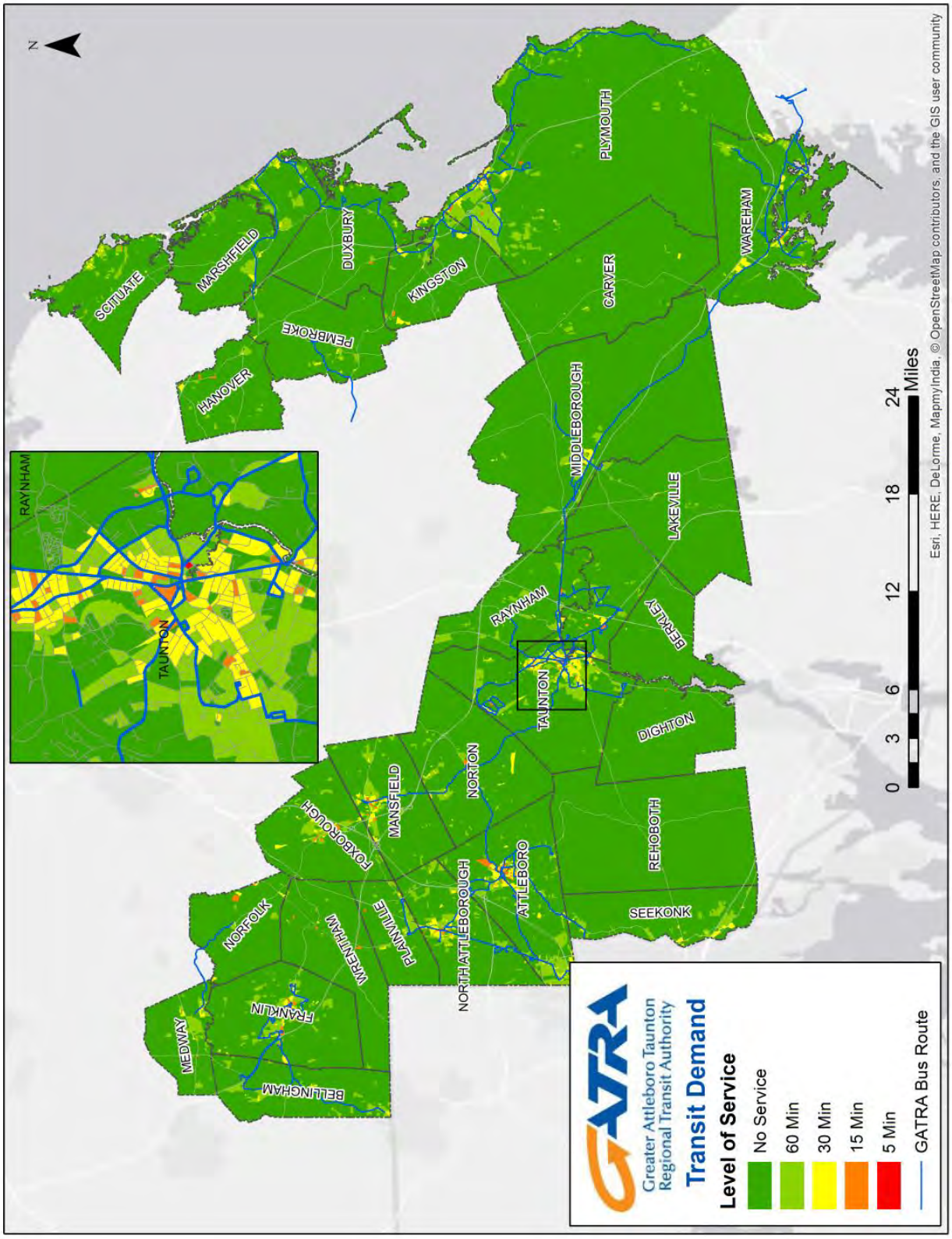

Figure 22. Transit Demand - Level of Service

Income Level

Median household income is used as a measure for propensity to use transit. Automobile ownership is expensive and as household incomes decline so does the likelihood of having access to a private vehicle. Work-trip market shares from the American Community Survey show that as income rises the percentage of people using transit decreases. The median household income in the region is $84,405. Despite this average, however, there are some cities, especially Taunton, with substantially lower income levels. These are depicted on the following map (Figure 23).

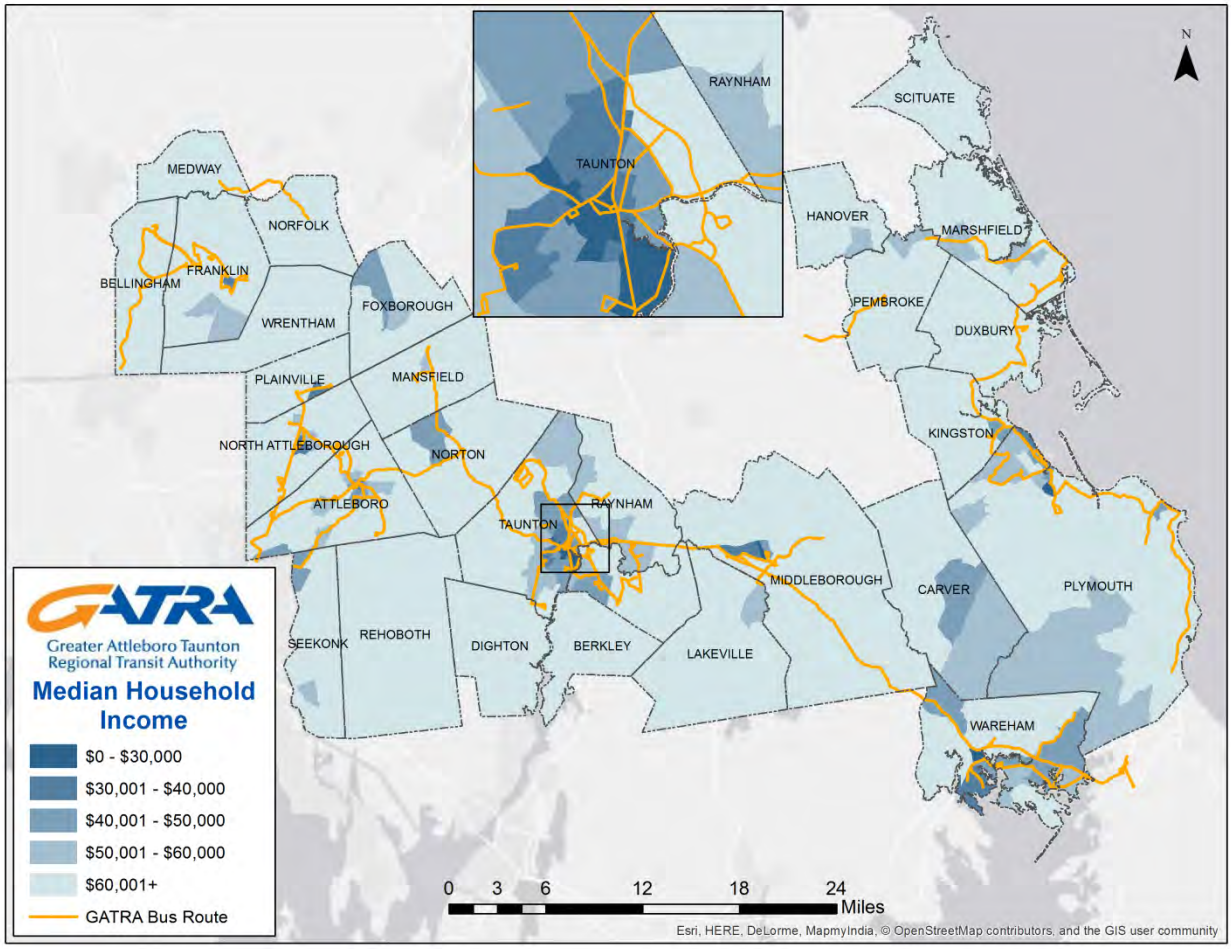

Figure 23. Median Household Income

Zero-Vehicle Households

The GATRA system serves an area where 5.9% of households do not have access to a personal vehicle. Concentrations of these households coincide with low-income and dense population areas shown on the previous maps. Figure 24 depicts these zero-vehicle household areas are not concentrated in a specific region but spread out amongst the communities. The three communities with the highest rate of zero-vehicle households are Taunton, Hanover, and Kingston.

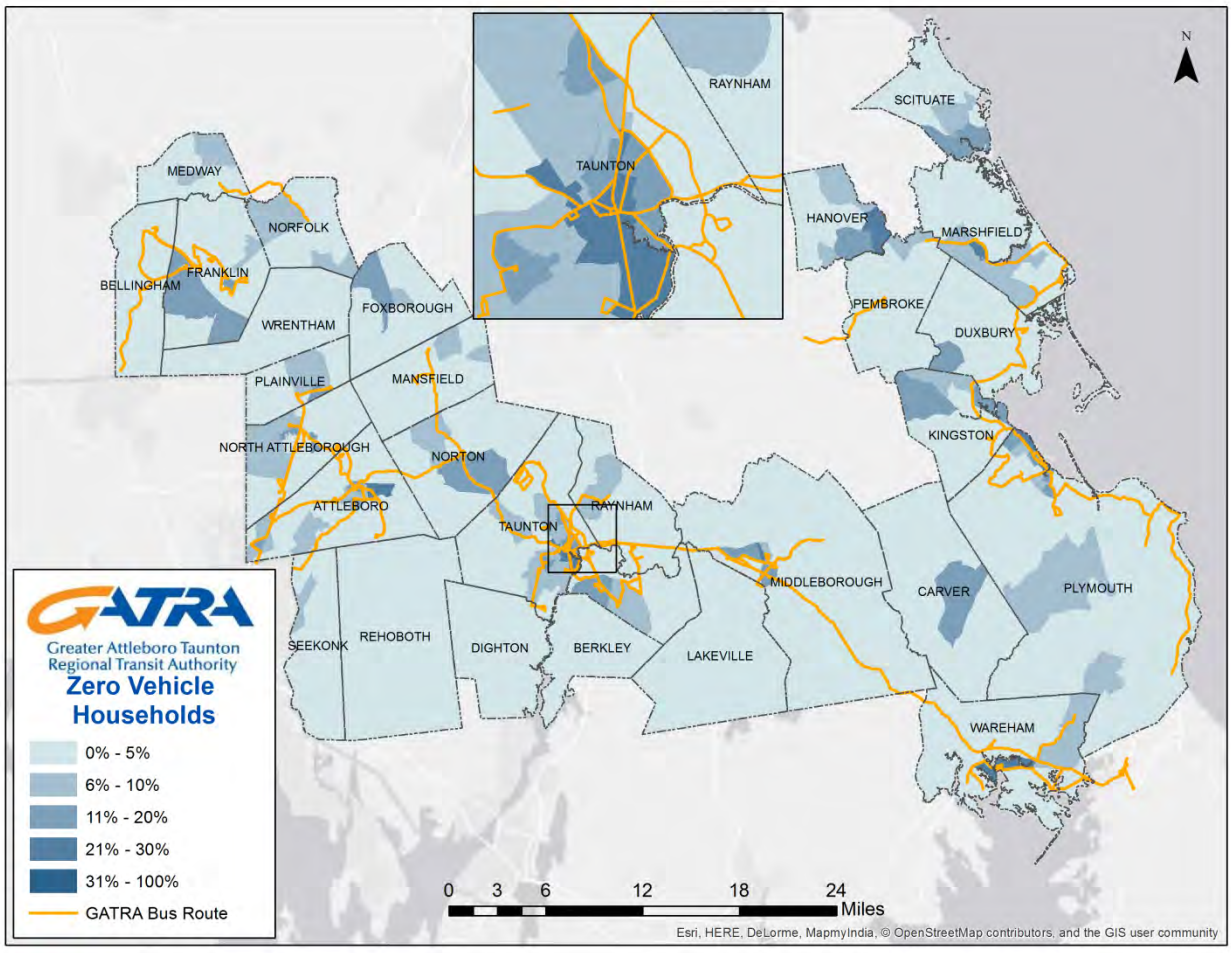

Figure 24. Zero-Vehicle Households

4.22 Methodology

To determine if GATRA's service is deployed in the most effective way possible to accommodate the transit needs of the regions workforce, the level of potential demand was calculated. The level of potential demand is based on the population density, number of jobs, percent of zero-vehicle households, proximity to schools and hospitals, median household income, the enrollment at local colleges and universities, park and ride lots, commuter rail stations, presence of priority development areas, the percent of households with people with disabilities, and the percent of the population above

the age of 65. The data was derived from the 2008-2012 American Community Survey (ACS) 5-Year Estimate and the MassGIS website (Table 6). The level of demand was analyzed at the census block level.

Table 6. Transit Demand Data Variables and Sources

Variable	Source
Population	ACS 5 Year table 2008-2012 SF 3 Table B00001
Area	Cartographic boundary files US census
Vehicleless household	ACS 5 Year table 2008-2012 SF 3 Table B25044
Schools	MassGIS from Mass - DOE
Hospitals	MassGIS from the DPH - OEMS
Median household income	ACS 5 Year table 2008-2012 SF 3 Table B19013
College and universities	MassGIS from National Center for Education Statistics
Disabled household	ACS 5 Year table 2008-2012 SF 3 Table B22010
Employment	MAPC statewide employment data
Priority Development Area	SPREDD, OPCD and CMPC GIS layers
Park and ride	MassDOT
Commuter rail	MassGIS from CTPS
Elderly	ACS 5 Year table 2008-2012 SF 3 Table B00001

To compile the data, all GIS shape file layers and tables were loaded into ArcGIS and joined on the appropriate variables. Data was then transformed to the census block level if it did not exist in this form already and then clipped to the RTA service area. A model was then run in ArcGIS to calculate the population density, percent of zero-vehicle households, percent of households with people with disabilities, percent of the population older than 65, employment density, and percentage of a priority development area within each block. This data along with the median household income, schools, hospitals, park and ride lots, commuter rail, and colleges and universities was then extracted into Excel for each block within the service area of the RTA.

Using the Jenks natural breaks optimization method[4], the data for the population density, number of jobs, percent of zero-vehicle households, percent of households with people with disabilities, percent of the population older than 65 and median household income were arranged into five classes. Clipping the data during the first step allows for the evaluation of only the RTA service area, so the values for the class breaks differ among the RTAs. This is important as it minimizes the data being skewed by areas not serviced by the RTA and allows for a more accurate picture of whether the RTA's service is deployed in the most effective way possible for that region.

Population density, number of jobs, percent of the population older than 65, percent of vehicles household and disabled households have a positive correlation with transit demand thus higher values

[4] The Jenks method is a way of arranging data into different classes by minimizing the average deviation from the mean a maximizing each class's deviation from the means of other groups. It is based on standard deviation.

were in higher classes. Those that fell into class 1 were given a score of 1; class 2 received a score of 2, etc. up to class five. Income has a negative correlation with ridership, so those that fell into class 1 were given a score of 5, class 2 a score of 4, class 3 a score of 3, class 4 a score of 2, and class 5 a score of 1.

The scores were then weighted based on highly recognized research done by Brian D. Taylor on the determinants of transit ridership[5]. The study uses a two stage regression model to look at more than fifteen census variables in 265 urbanized areas to determine which characteristics impact the level of transit use the most. The parameter estimates found in the study were used in this plan to weight the classification value given in the previous step for population density, percent of zero-vehicle households, and median household income

Taylor's research found that the percent of college students had a positive correlation to ridership. A weighted score was calculated by dividing the number of enrolled students according to the National Center for Education Statistics by 1,000. For the commuter rail stations, schools, and hospitals one point was given for each located within the block. Work trips are one of the primary trips taken by individuals so weight of 1.5 was applied to the classification score for the number of jobs located in a block. Priority development areas are locations identified by a community as capable of supporting additional development and where resources and energy should be focused. The score was calculated by determining the percentage of a block which had a priority development area. Park and ride lots were scored by dividing the number of spaces by 100 to provide a weighted score for ridership. Research has also shown that people with disabilities are more likely to use transit than those without as it may be their only mean of motorized transport. A complete set of variables and method for calculating the value can be seen in Table 7.

Table 7. Transit Demand Variables and Formulas

Variable	Value Calculation
Population density	Classification score * 0.76
Vehicleless household	Classification score * 1.75
Schools	Count
Hospitals	Count
Median household income	Classification score * 0.92
College and universities	Number of Students/1,000
Disabled household	Classification score * 0.25
Priority development area	Percent of area that was priority development * 5
Employment	Classification score * 1.5
Park and ride	Number of spaces/100
Commuter rail	Count
Elderly	Classification score * 1.31

[5] Taylor, B.D. et al, Nature and/or nurture? Analyzing the determinants of transit ridership across US urbanized areas, Transport. Res. Part A (2008), doi:10.1016/j.tra.2008.06.007

The scores for each variable were then summed for each block to get an overall score for transit demand by block. This data was then put into GIS and displayed to show demand for the entire region. Features such as schools, hospitals, park and ride lots, commuter rail stations, key destinations, and important features were overlaid on the map to provide a frame of reference and to act as supporting material.

4.23 Findings

GATRA provides fixed route bus service to many if areas that were determined to have a high demand but there are eight regions in the service area that exhibit high demand characteristics but for which there is no fixed route service (Figure 25). These regions include areas of Franklin, Wrentham, Foxborough, Mansfield, Hanover, Kingston, Carver, and Plymouth. A further analysis of these areas explores why these areas have medium-high transit demand.

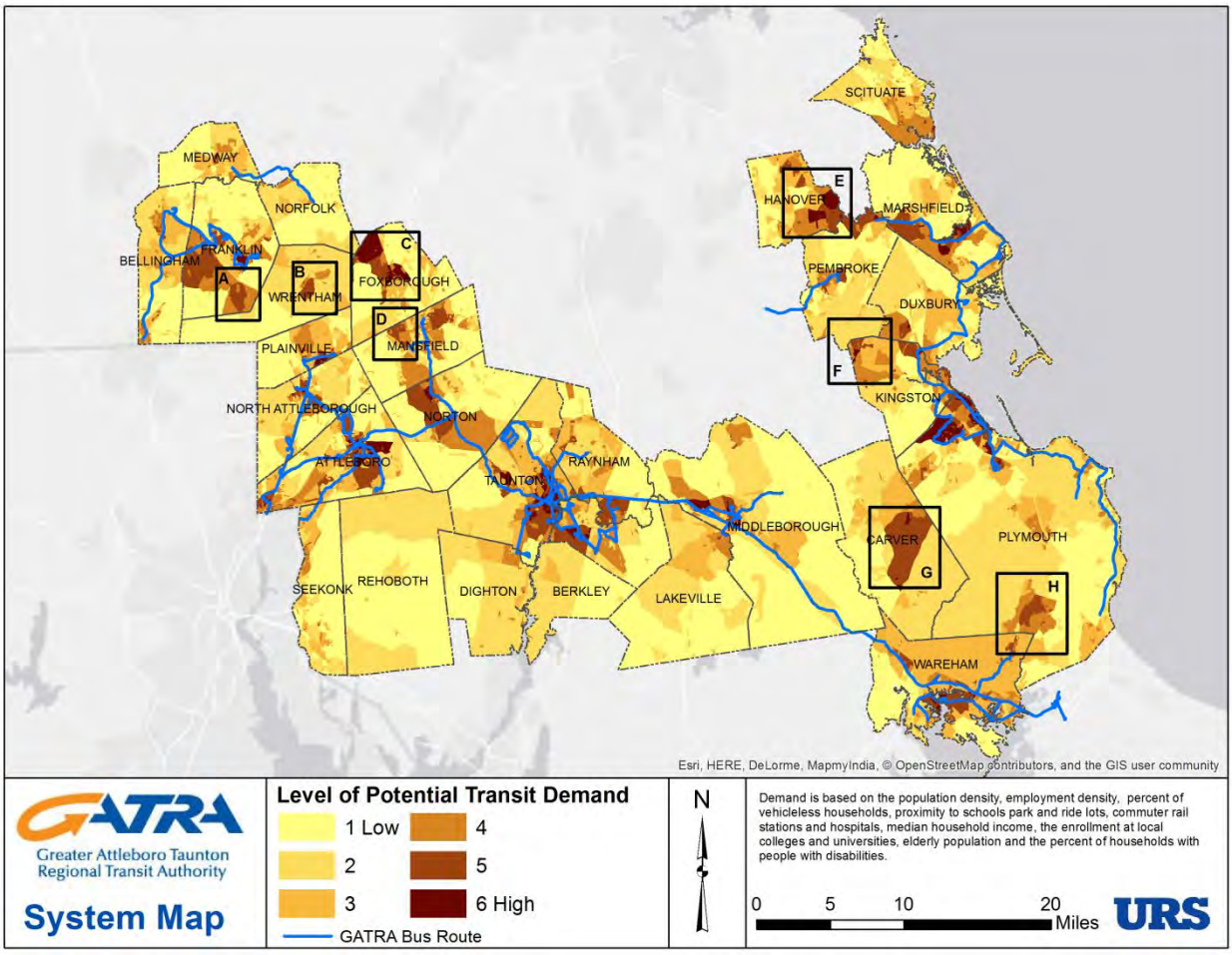

Figure 25. Underserved Areas

Area A (Figure 26) in Franklin has transit demand because of the percentage of households without access to a vehicle. In the overall GATRA service area 5.9% of households do not have a vehicle, but in this area of Franklin the zero-vehicle rate is 10.8%. The area also has a median household income of $54,864, which is lower than the regional average of $84,405. This area represents a substantial employment center, with nearly 700 jobs and should be monitored for future service implementation.

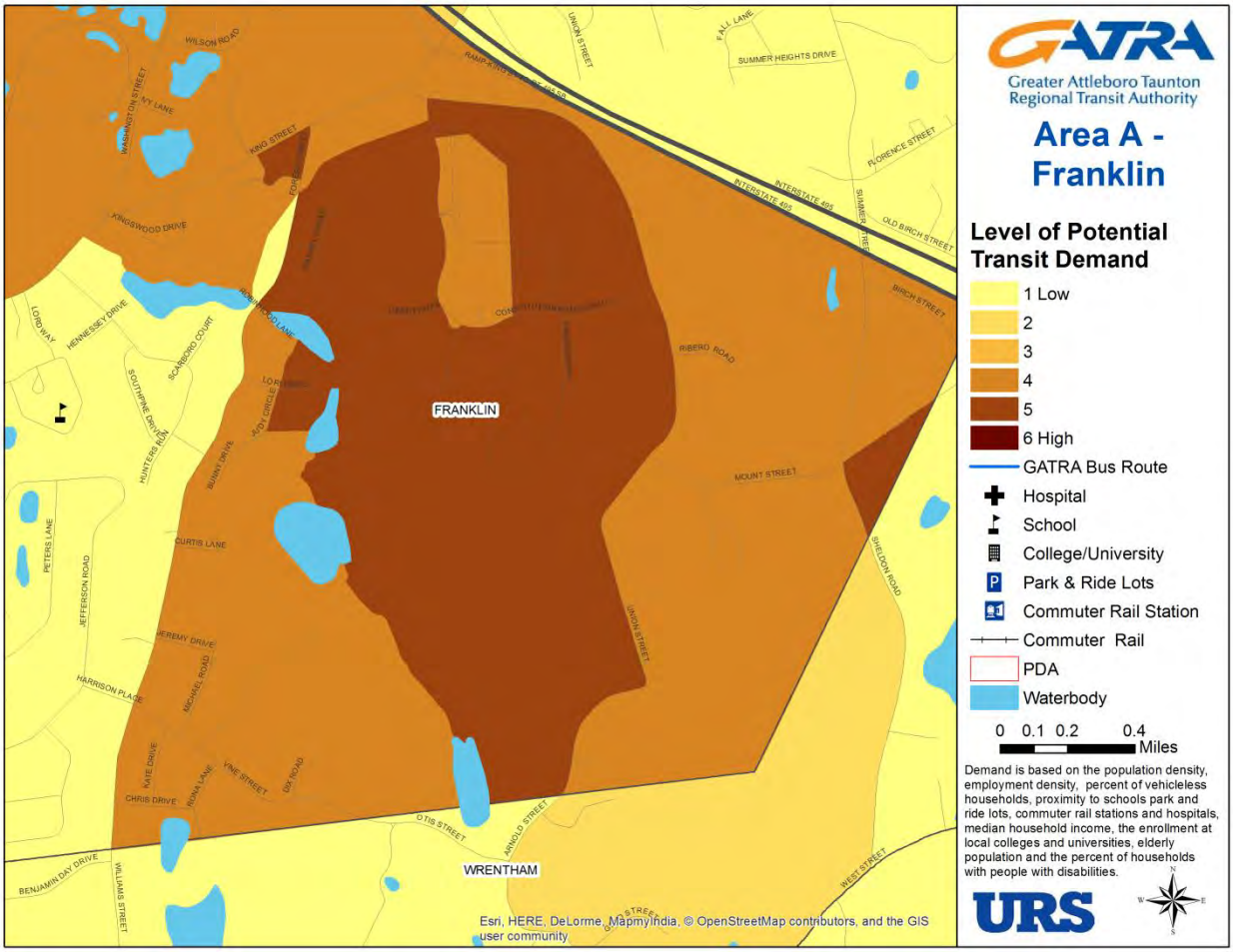
GATRA
Greater Attleboro Taunton Regional Transit Authority
Area A - Franklin
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
GATRA Bus Route
Hospital
School
College/University
Park & Ride Lots
Commuter Rail Station
Commuter Rail
PDA
Waterbody
0 0.1 0.2 0.4
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
FRANKLIN
WRENTHAM
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Figure 26. Area A: Franklin

Area B (Figure 27) in Wrentham has potential transit demand because of the presence of a large number of employees at a school and a nursing rehabilitation center. When compared to the demands of the other areas, this location has a low priority for service.

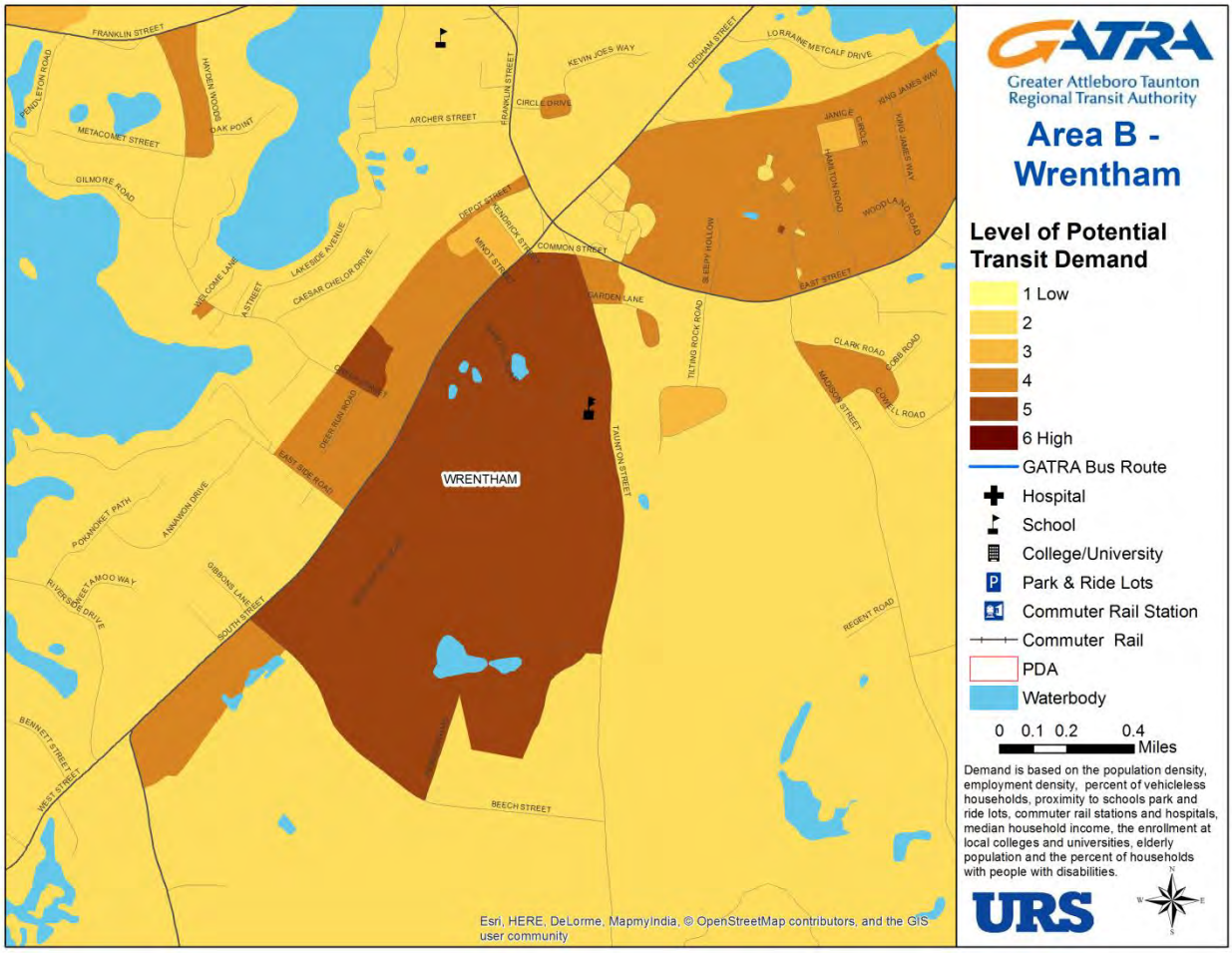

Figure 27. Area B: Wrentham

Area C (Figure 28) in Foxborough has a high demand for transit service. The northern part of this area has demand because of a high rate of zero-car households (13.4%), a low median household income ($47,000), and a large number of jobs (more than 1,700) at Gillette Stadium and Patriot Place. The Route 1 Growth Node PDA is also located in this area. The southern portion of the area is home to the Downtown / Invensys Growth Node PDA, an 8.1% rate of zero-car households, and a median household income of $62,683. Based on these attributes, Area C should be considered for future service.

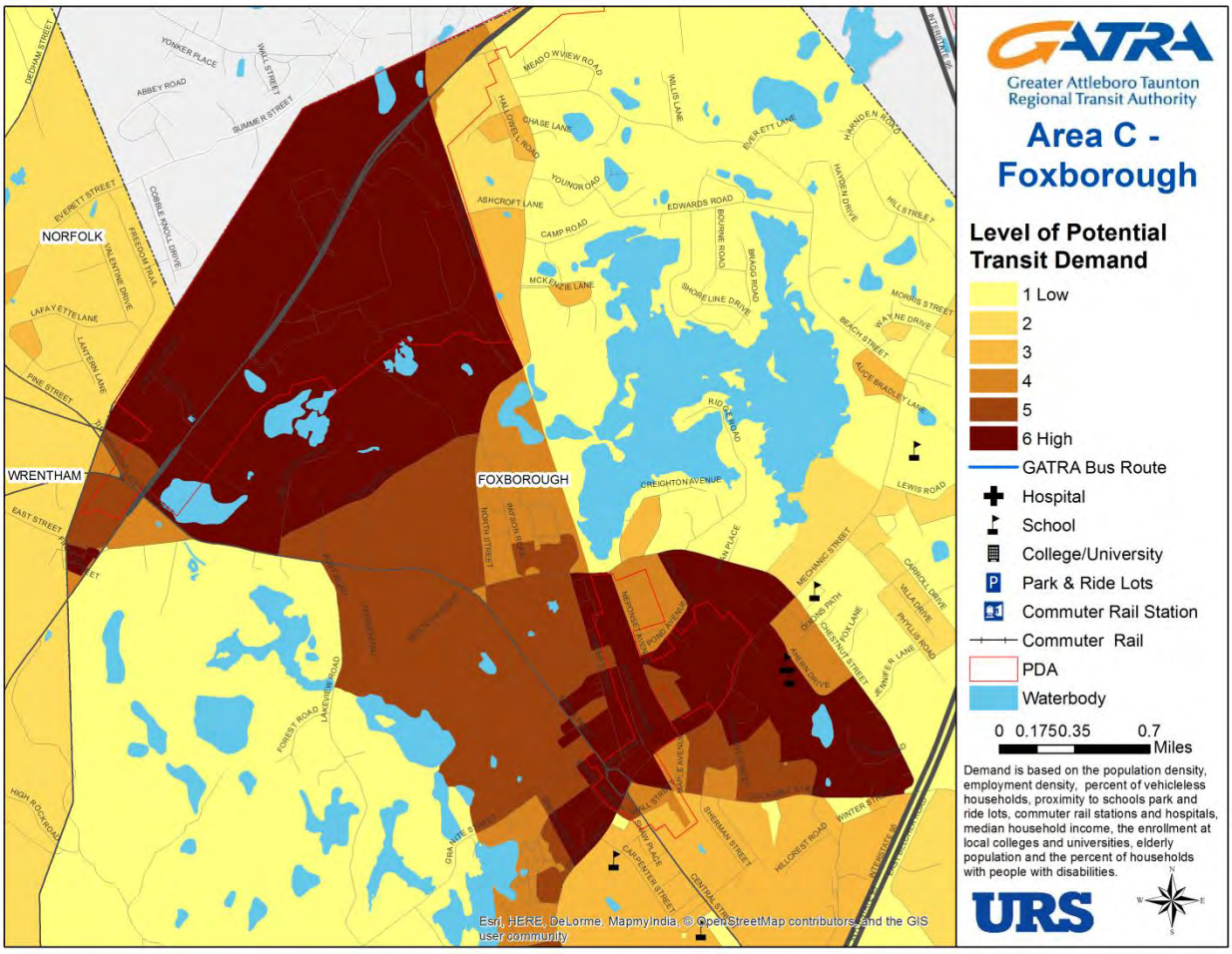
NORFOLK
WRENTHAM
FOXBOROUGH
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community
GATRA
Greater Attleboro Taunton Regional Transit Authority
Area C - Foxborough
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
GATRA Bus Route
Hospital
School
College/University
Park & Ride Lots
Commuter Rail Station
Commuter Rail
PDA
Waterbody
0 0.175 0.35 0.7 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS

Figure 28. Area C: Foxborough

Area D (Figure 29) in Mansfield is home to the Cabot Business Park PDA, an employment center with more than 2,000 jobs. This area is also approximately two miles from the Mansfield commuter rail station. All Mansfield residents can use the Mansfield T Connecter a curb-side transportation service to and from the rail station and residences. This service is open to Mansfield residents only and is sponsored by GATRA. Fixed route service is provided to the commuter rail station via the Wheaton T Connector. This route links the commuter rail station to Mansfield crossing, just south of the Cabot business park but does not service the business park. This area has the potential for significant bus service demand, but a business survey should be conducted to determine commuting patterns and identify if the businesses currently provide private shuttles to and from the station for their employees.

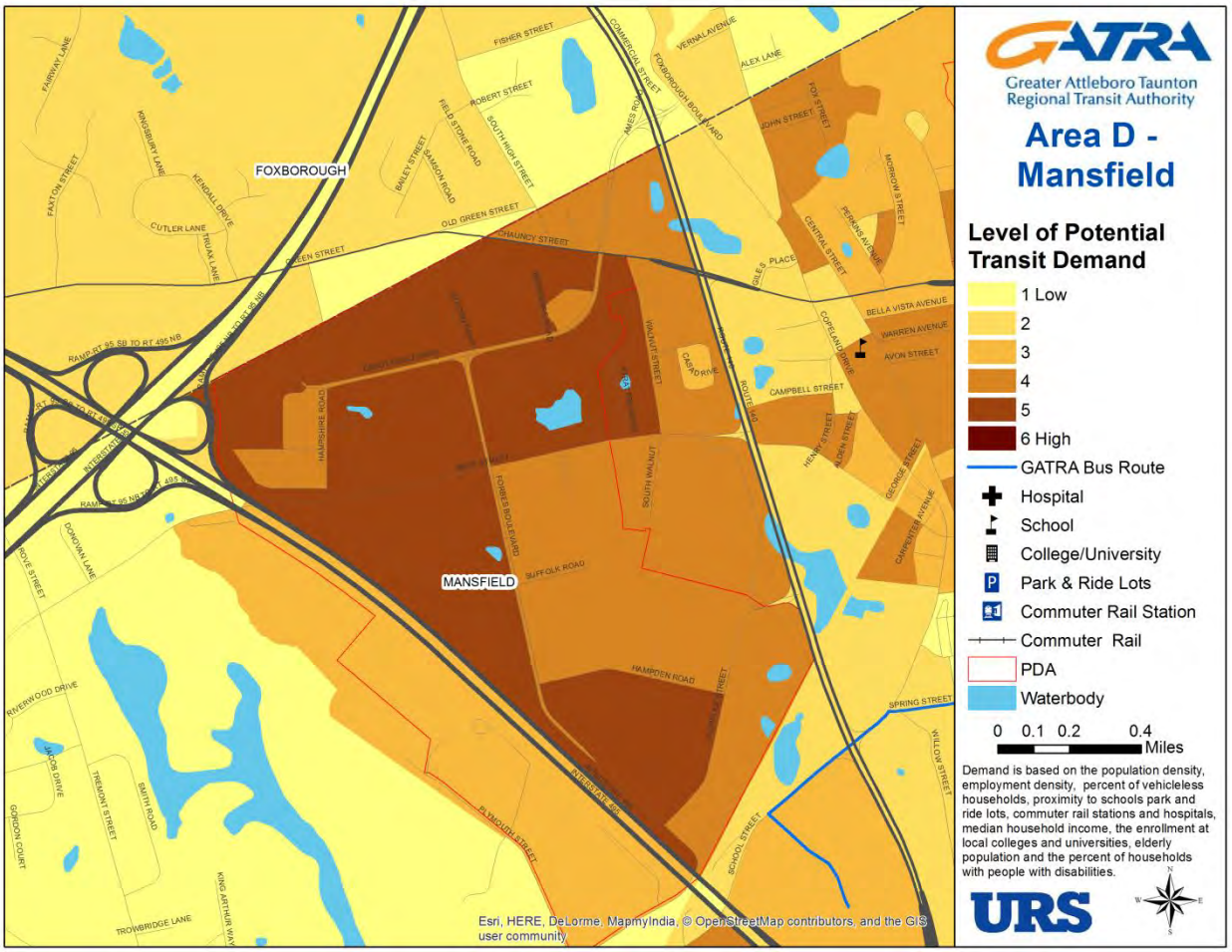
FOXBOROUGH
MANSFIELD
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community
GATRA
Greater Attleboro Taunton Regional Transit Authority
Area D - Mansfield
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
GATRA Bus Route
Hospital
School
College/University
Park & Ride Lots
Commuter Rail Station
Commuter Rail
PDA
Waterbody
0 0.1 0.2 0.4
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS

Figure 29. Area D: Mansfield

Area E (Figure 30) in Hanover has transit demand because of the percentage of households without access to a vehicle. In the overall GATRA service area 5.9% of households do not have a vehicle, but in this area the zero-vehicle rate is nearly 25%. The area also has a large concentration of elderly residents. While the area is not very dense and has moderate job activity, the possibility of extending the existing Marshfield Route to serve this area should be explored or a new route established.

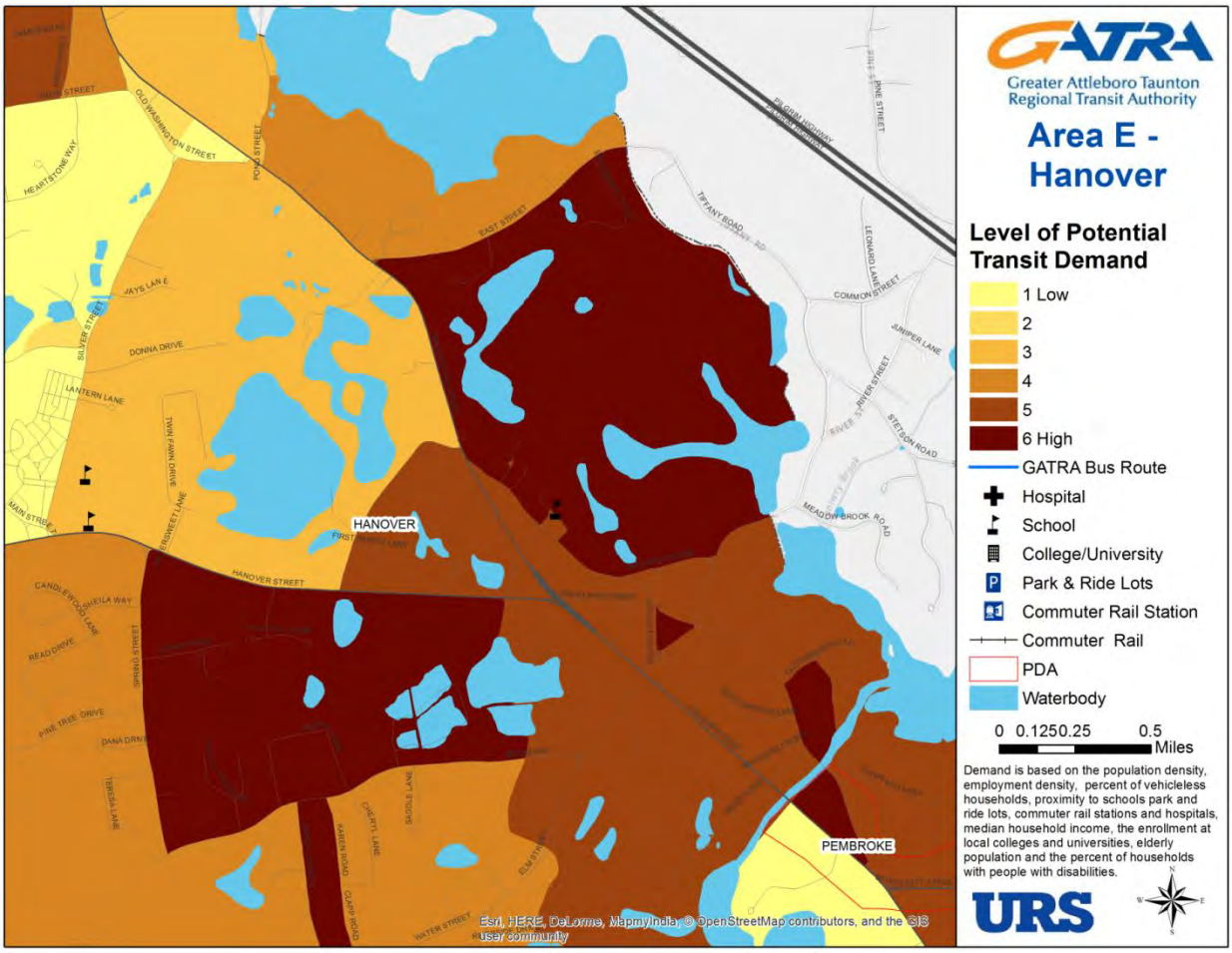
GATRA
Greater Attleboro Taunton Regional Transit Authority
Area E - Hanover
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
GATRA Bus Route
Hospital
School
College/University
Park & Ride Lots
Commuter Rail Station
Commuter Rail
PDA
Waterbody
0 0.1250.25 0.5 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
HANOVER
PEMBROKE
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Figure 30. Area E: Hanover

Area F (Figure 31) in Kingston along Silver Lake has demonstrated transit demand because of the presence of 606 jobs, a large concentration of elderly residents, and a 19.2% rate of zero-car households. These attributes, however, are largely due to the location of the Wingate Health Care Center, which included nursing and assisted living facilities. As such, this area is not a priority for additional service.

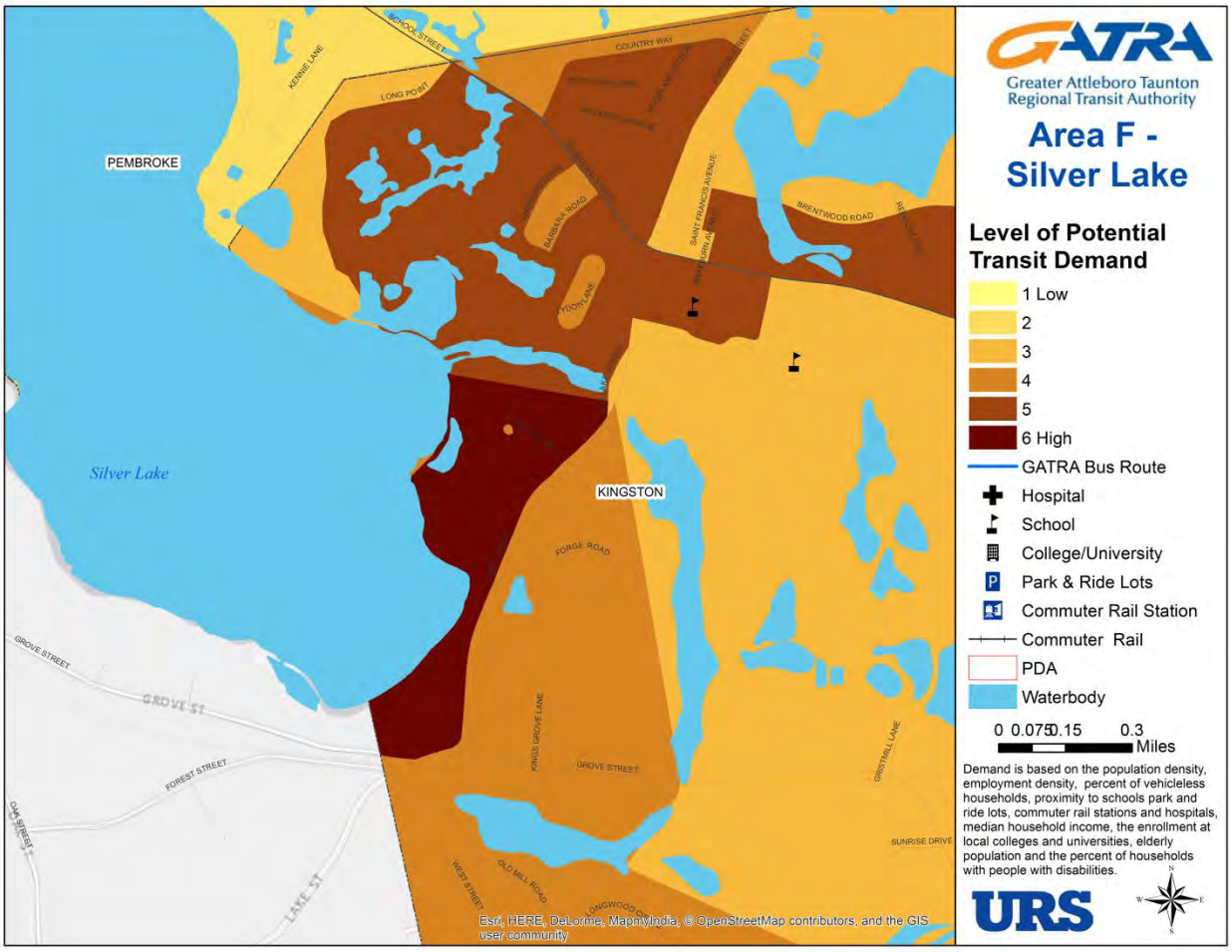

Figure 31. Area F: Lake Silver

Area G (Figure 32) in Carver has transit demand because of the percentage of households without access to a vehicle. In the overall GATRA service area 5.9% of households do not have a vehicle, but in this are a of Carver the zero-vehicle rate is 16%. The area also has a median household income of $43,000, which is lower than the regional average of $84,405. Because this area lacks substantial population or employment density, however, it is not a priority for additional service.

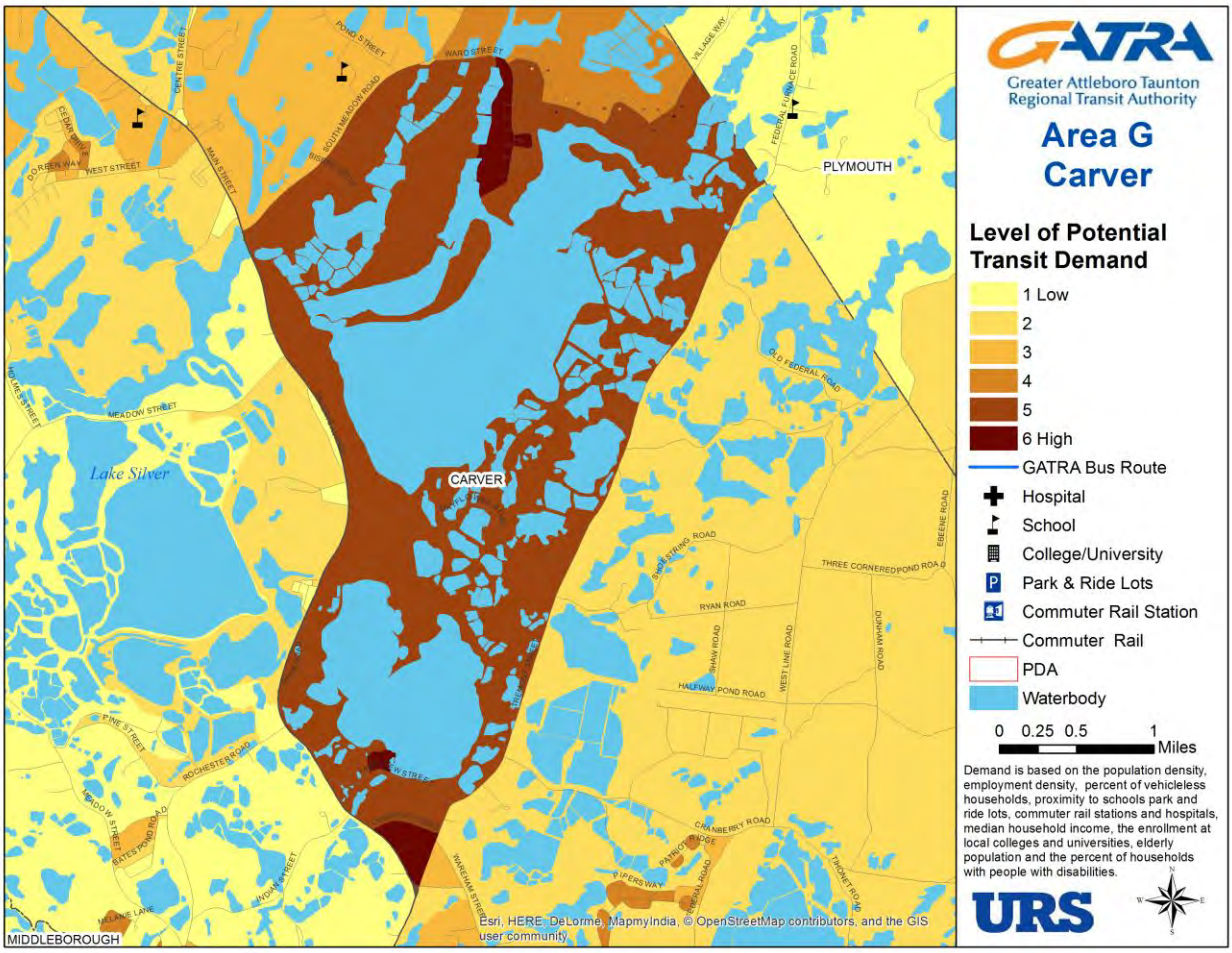

Figure 32. Area G: Carver

Area H (Figure 33) in Plymouth has the potential for transit demand due to an ongoing development project. River Run will have 1,175 residential units as well as 60,000 square feet of commercial space. The project, developed by A.D. Makepeace, is designed to look like a village center. Additionally, the area has a median household income of $57,000 and a zero-car rate of nearly 10%. This area should be monitored as the status of the development evolves. If possible, the developer should be encouraged to include transit within the plan.

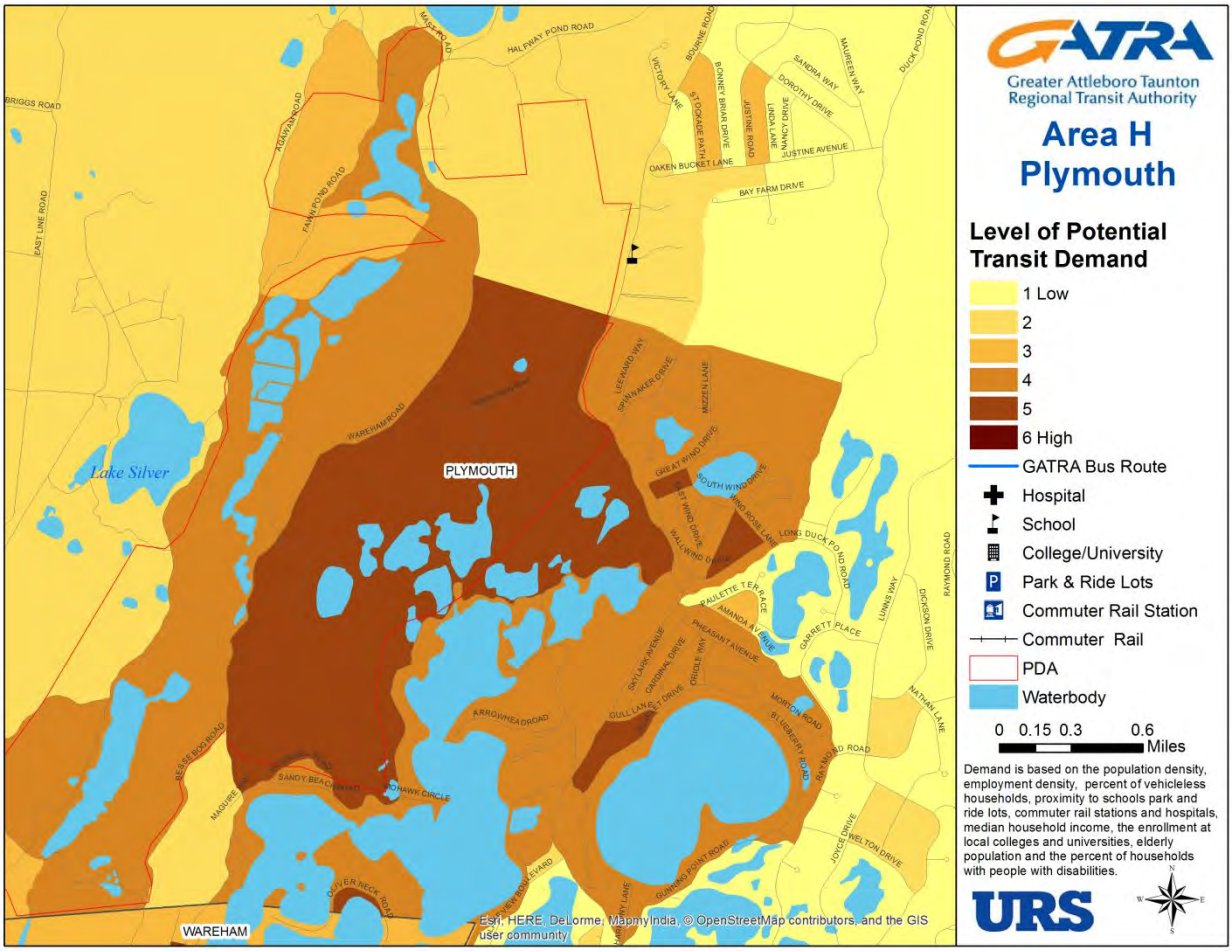

Figure 33. Area H: Plymouth

There are areas in the GATRA service area that are possible candidates for service modifications, which would better deploy service to meet the needs of the region's workforce and improve access to employment. Operating late night service[6] on many of the routes would allow for second and third shift

[6] Night service is defined as service that runs between 7 PM and 11 PM. Late night service is any service that ends after 11 PM.

employees to use transit. Providing service outside of traditional days and times would allow for additional trips in addition to those made for work. While GATRA has demonstrated success at creating an intermodal system through providing connecting services at commuter rail stations to bring riders to employment, more can be done. To understand what the system can achieve, we must first understand what the current demand is. The following are maps of each route depicting the regional demand within ¼-mile of each route. Recommendations in the following chapters will be designed to strengthen job access and develop even better connections.

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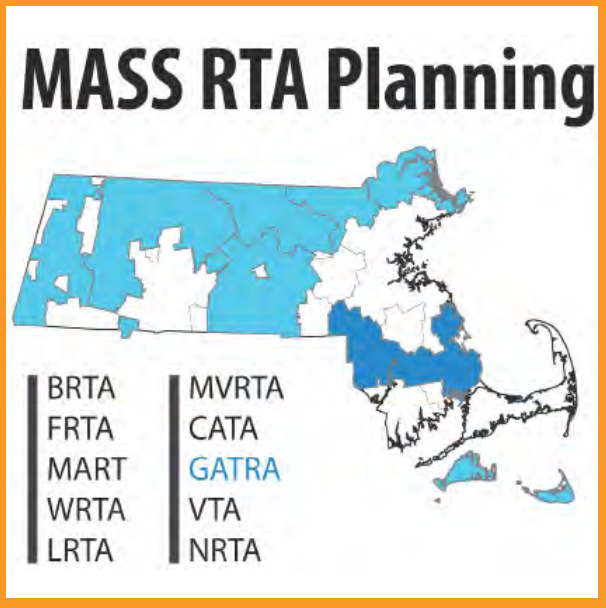

Chapter 5

AECOM / URS
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GATRA
Greater Attleboro Taunton
Regional Transit Authority

5. FARE RATES AND COLLECTION METHODS

This chapter will review the fare collection methods used by GATRA as well as their fare structure. Next national best practices in regards to fare collection, technology and policies will be explored. Finally a comparison of how GATRA measures up against the best practices will be presented along with recommendations to improve the fare system.

5.1 Collection Methods

The Greater Attleboro Taunton Regional Transit Authority (GATRA) upgraded to the GFI Genfare Odyssey (GFI) in June 2006. GFI fareboxes are installed in all fixed route buses, with the exception of those operated in Franklin and Wareham. The upgraded system also expanded the types of passes available to passengers. In April 2014 GATRA installed a Ticket Vending Machine (TVM) in its Taunton terminal where passengers can purchase all GATRA tickets and passes including demand response passes. An additional TVM is installed at the Attleboro Intermodal Center. Most fixed route passes for the GFI system can be purchased from the farebox on GATRA buses; however the 31-day pass is still sold only at pass sale locations or through the Ticket Vending Machines. Smaller fixed route operations located in Franklin and Wareham have Diamond drop boxes. These collect cash fares manually and limited passes are available for these routes. Shuttle service to MBTA commuter rail stations operated by the Councils on Aging in Bellingham, Medway and Middleboro do not have any fareboxes at this time.

Farebox

The GFI fareboxes accept the magnetic stripe tickets as well as cash and coin for fares. The farebox is capable of electronically validating and registering all coins and bills inserted for payment. All coins and bills are automatically identified by denomination, without operator action. The driver can verify the fare deposited using the Operator Control Unit (OCU). The farebox will generate a change card for any amount deposited over the fare due. These GFI fareboxes have the capability of accepting SMART Card technology. GATRA is evaluating this upgrade to determine whether to implement it in the system.

Ticket Vending Machine (TVM)

Ticket Vending Machines are located at the Taunton Terminal and Attleboro Intermodal Transit Center. Passengers can purchase all GATRA passes, including ten ride passes for the demand response service, at these locations using cash/coin.

5.2 Fare Structure

GATRA fares are detailed in Table 8 below:

Table 8. Fares

ONE-WAY CASH FARES	FARE
Full-Fare	$1.00
Half-Fare for Seniors age 60 and older	$ .50
Half-Fare for Disabled and/or Medicare Card Holders	$ .50
Half-Fare for Students through High School	$ .50
TRANSFERS*	
Transfer Full-Fare (within one town only)	$0.50
Transfer Half-Fare for Seniors age 60 and older (within one town only)	$ .25
Transfer Half-Fare for Disabled and/or Medicare Card Holders (within one town only)	$ .25
Transfer Half-Fare for Students through High School (within one town only)	$ .25
DAY PASS*	
Full Fare	$3.00
Half Fare for Seniors age 60 and older	$1.50
Half Fare for Disabled and/or Medicare Card Holders	$1.50
Half Fare for Students through High School	$1.50
3-DAY PASS*	
Full Fare	$9.00
Half Fare for Seniors age 60 and older	$4.00
Half Fare for Disabled and/or Medicare Card Holders	$4.00
Half Fare for Students through High School	$4.00
10-RIDE PASS*	
Full Fare	$9.00
Half Fare for Seniors age 60 and older	$4.00
Half Fare for Disabled and/or Medicare Card Holders	$4.00
Half Fare for Students through High School	$4.00
31-DAY PASS*	
Full Fare	$30.00
Half Fare for Seniors age 60 and older	$15.00
Half Fare for Disabled and/or Medicare Card Holders	$15.00
Half Fare for Students through High School	$15.00

*Offered only on routes with GFI Genfare Odyssey fareboxes

20-RIDE PASS**	
Full Fare	$17.00
Half Fare for Seniors age 60 and older	$8.00
Half Fare for Disabled and/or Medicare Card Holders	$8.00
Half Fare for Students through High School	$8.00
MONTHLY PASS**	
Full Fare	$30.00
Half Fare for Seniors age 60 and older	$15.00
Half Fare for Disabled and/or Medicare Card Holders	$15.00
Half Fare for Students through High School	$15.00
MONTHLY PASS – WAREHAM/LAKEVILLE TRAIN CONNECTOR**	
Full Fare	$50.00
Half Fare for Seniors age 60 and older	$25.00
Half Fare for Disabled and/or Medicare Card Holders	$25.00
Half Fare for Students through High School	$25.00

5.3 National Best Practices

This chapter provides an overview of different fare policies and fare media that are used throughout the United States. While the fare policies and practice of GATRA reflect local needs and practices, the comparison with national standards can provide helpful insight and guidance regarding ways to improve available fare media and policies. The fare policy and standards section describes various policies and fare pass types employed by transit agencies and represent standard fare practices on a national level. A wealth of information regarding best practices in fare policy, technology, and fare media is presented by the Transit Cooperative Research Program (TCRP) and forms the basis of this section. Information is also supplemented by research on specific fare practices of transit agencies throughout the country.

An overall summary of TCRP Report 94, the update on Fare Policies, Structures, and Technologies shows that[9]:

- Overall fare levels are increasing, specifically the base cash fares
- Agencies are moving towards a more simplified fare structure
- Many agencies are moving away from a policy of free or reduced cost transfers and replacing the transfer policy with a day pass that can be purchased onboard vehicles

**Offered only on routes with diamond drop boxes

[9] Transit Cooperative Research Program Report 94: Fare Policies, Structures, and Technologies pages 2 through 5

- Pre-paid and multi-trip fare media is growing
- Many agencies have either implemented or are exploring Smart Card technologies
- Regional fare integration, where multiple operators within a metropolitan region, are moving towards a common fare policy and media improving the customer experience

5.31 Fare Technology and Media

Fare technology and media represent the primary hardware and software for collecting passenger fares onboard transit vehicles. Transit agencies throughout the country use a variety of different fare technology and media (how the fare is paid). The technology and media have evolved greatly over the years. Current fare technology runs the range from non-registering fareboxes which are literally just containers that house the fare revenue deposited by passengers all the way up to SmartCard technologies that allow passengers to pay their fare with a quick pass of a credit card size fare instrument. Technology is evolving in such a way that some agencies have been experimenting with paying fares using SmartPhone applications. Some systems, primarily rail and Bus Rapid Transit systems, have off-board fare collection technology with a proof of payment system. Below is a description of different fare technology and media.

Non-registering fareboxes are the simplest fare technology. These fareboxes are little more than containers where passengers are able to deposit fares. These fareboxes can only accept cash fares or, if the system utilizes them, fare payment coupons. Flash passes, coupons, and punch cards are used for prepaid fare media. These fareboxes do not have the ability to track ridership payment characteristics. Many operators who use these fareboxes will have a separate passenger counter device that the operator manual "clicks" for each fare type. Very few systems use non-registering fareboxes nowadays.

Registering fareboxes allow for fares to be paid and data to be collected regarding fare types. These fareboxes can collect the number of passengers boarding a bus by each fare type for each trip operated. Registering fareboxes can be designed to accept different types of fare media including flash or punch passes or even magnetically coded fare cards. With magnetically coded fare cards, the fare type can be read automatically by the farebox. For punch and flash passes, operators can manually enter information regarding fare type paid. These are currently the most common types of fareboxes.

The newest fare technology used by transit agencies are known as a SmartCard system. The SmartCard fare instrument is the size of a credit card and can be loaded with any kind of pass or stored value passes. SmartCard readers are needed on fareboxes in order to process fares. Similar to the magnetically coded fare media, many different fare types are available and are automatically counted by the farebox itself. By installing SmartCard readers at each door of a transit vehicle, multiple door boarding can be facilitated. Another advantage of SmartCards is that they can be used by multiple systems. The Massachusetts Bay Transportation Authority (MBTA) Charlie Card, which is also accepted

by ten of the fifteen Regional Transit Authorities[10], is an example of a SmartCard. There is a high cost to transit agencies when implementing SmartCards as they require new or modified fareboxes, and the fare media itself is rather expensive.

SmartCard technologies such as contactless fare media, where a user no longer swipes a card but simply taps the card on a reader and mobile ticketing technology where one pays their fare from their smartphone, are constantly evolving. An example of a contactless card is the Washington METRO SmarTrip card.

Transit agencies are also starting to experiment with fare payment through cellular telephone. With this, the cellular telephone operates as a SmartCard and has the ability to store multiple pass options and fare types. This works by riders downloading an application onto their cell phone, payment is processed through the app and a transit pass is produced on the person's phone[11]. This mobile ticketing system is currently used by TriMet in Portland, OR, the first agency in the US to pilot this for fixed route. The user simply selects their rider and mode type to purchase a ticket, then when they want to use it they select the ticket which generates a QR code that the fare inspector can scan. The technology was developed by GlobeSherpa, a Portland based software company. Similar technology, developed by Bytemark, was deployed in 2014 at Capital Metro in Austin, TX. Locally the MBTA uses technology developed by Masabi for mobile payments on their commuter rail and ferry systems.

In the future, other technologies such as the Magic Band which Disney uses as admission to the park, connects to your credit card for easy payment and unlocks your hotel room, may be possible for travel on transit. The band contains a short range RFID chip similar to the read-only RFID[12] chip found in contactless SmartCard technology. The Disney Magic Band is similar to the UBand made by IDenticard. The UBand uses MIFARE[13] technology to provide contactless access and payment and is currently being used by Mohawk College in Ontario. In the United Kingdom, Barclaycard launched the bPay band a similar wrist band which users can link any VISA or MasterCard debit or credit card to and can be used at any establishment that accepts contactless payments (300,000 locations). Amongst the many things the band can be used to pay for is the fare (bus or rail) on Transport for London[14].

[10] Charlie Card is accepted for fare payment by the following operators: Massachusetts Bay Transportation Authority, Berkshire Regional Transit Authority, Brockton Area Transit Authority, Cape Ann Transportation Authority, Cape Cod Regional Transit Authority, Lowell Regional Transit Authority, Merrimack Valley Regional Transit Authority, MetroWest Regional Transit Authority, Montachusetts Regional Transit Authority, Southeastern Regional Transit Authority, and Worcester Regional Transit Authority

[11] http://trimet.org/mobiletickets/

[12] Radio-frequency identification cards (RFID) is a wireless chip which uses electromagnetic fields to transfer data,

[13] MIFARE is the name of the technology (chip) that is created by NXP. It complies with international standard ISO/IEC 14443 for data security and transmission protocols for communication with contactless integrated circuit cards , proximity cards and identification cards.

[14] The agency who oversees the London rail and bus network.

Figure 34. SmartCard Technologies. Left WMATA SmarTrip contact-less; Center TRI MET mobile ticketing; Right Disney's Magic Band

Fare media has evolved drastically over the last 100 years for transit from entirely cash based system to the new innovative contact technology merging today. The first fare media was the token followed by the ticket. These allowed transit agencies to offer discounts over the cash fare. Tickets were used until magnetic stripe cards were introduced, this allowed for the development of passes. Tap cards were developed next with RFID technology and had the capability of operating as a stored value card and as a daily, weekly monthly, etc pass. The newest technology is contactless "open" fare payments which are directly linked to debit or credit cards and can be in plastic card form, on a mobile device and now a wrist band. Regardless of the type of technology used reducing cash transfers benefits the transit system all around. The overhead cost to process cash as opposed to cards can be as much as double due to the security measures and personal needs to empty vaults and count money. Improved farebox technologies not only can improve operating costs but can speed up the boarding time of passengers thus reducing the overall travel time.

In Helsinki, an innovative fare strategy is being implemented through a new market approach viewing Mobility as a Service (MaaS). The principle of the MaaS approach focuses on door-to-door service and mobility as a whole package, instead of each mode individually. Through this method, users are able to plan their trip through one portal and payment system. Different packages provide riders with unique options to meet their transit needs. For example, an urban commuter package, available for purchase at a set price point, may include free public transport in the rider's home city, up to 60 miles in taxi services, 300 miles for rental cars, and 1,000 miles in domestic public transport. Packages are flexible and can be adjusted to meet the needs of different service areas. Incorporating all transport modes into one, user-friendly interface will provide seamless service to the rider and encourage the use of public transportation over personal vehicles.

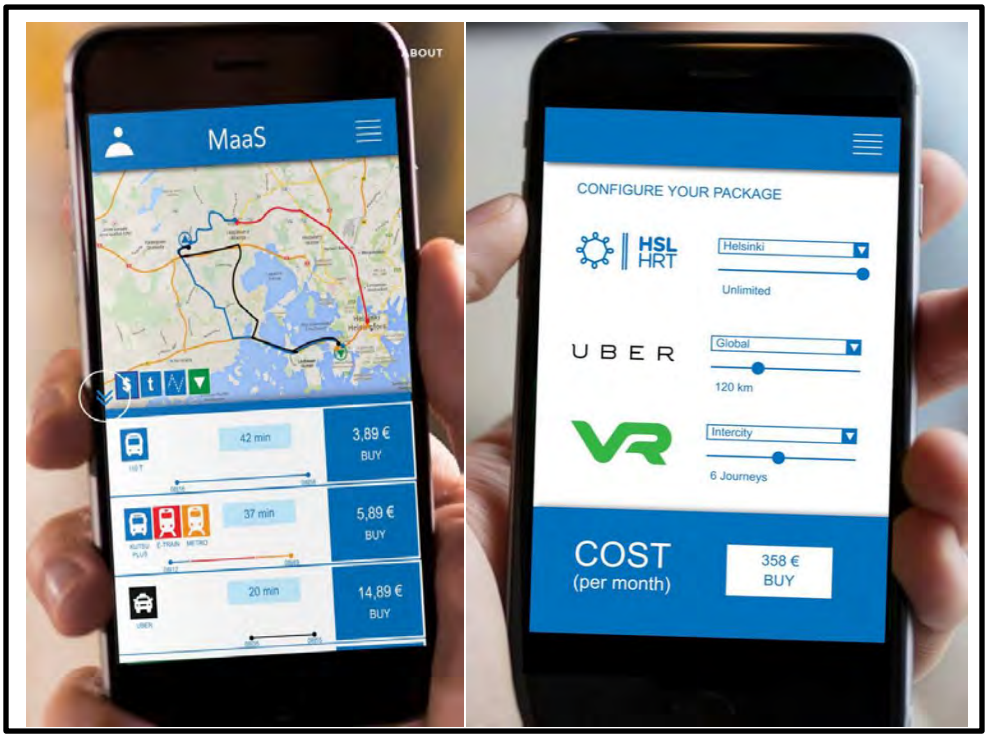


Figure 35. Helsinki Mobility as a Service App

Some systems have implemented off-board fare collection/proof of payment fare payment. Off board fare collection requires fare equipment located at stops and stations and allows for faster boardings. Passengers pay their fare off-board and are issued a receipt or their farecard is validated for the trip. Fare inspectors randomly check to see if passengers have paid their fares by scanning farecards or looking at the receipts. Those who have not paid fares are issued a citation.

Moving forward, the best plan of action involves each of the RTA's joining together to research and develop innovative fare policies and media for the next generation. Through collaboration, the RTA's have the chance to implement fare strategies that can function collectively across Massachusetts and be a model for innovation. As GATRA's and other RTA's fare technology becomes outdated and must be replaced this present an opportunity for the RTAs to explore alternative technology such as the MaaS project in Helsinki, mobile payments, or the bPay/Magic Band/Uband. A system-wide approach, as opposed to individual fare strategies for each RTA, will foster a cohesive transit system and provide riders an easier opportunity to travel between the RTA's.

5.32 Fare Policy and Standard Practices

A review of fare policies around the country provides a myriad of different fare types and fare media. Fare media types include unlimited ride passes and multi-ride/stored value transit fares. A description of cash fares and transfer policies are included in this section. Fare policies and standard practices vary amongst various transit agencies and are suited to meet individual local conditions.

5.33 Fare Policies

Cash fares are accepted by almost all transit agencies. Most transit agencies accept only exact fare and will not make change. A small number of agencies will make change for passengers on some or all services. Some agencies have limitation with their fare collection equipment that only allows the farebox to accept coins, while most operators are able to accept both bills and coins.

Unlimited ride passes allow users to take as many rides as needed over a set period of time. These passes are a pre-paid fare media and come in many increments. Most agencies have either a 30-day, 31-day or "monthly" pass. For a shorter duration, agencies may have a week pass or even a two-week pass. The shortest duration pass is a one-day pass and agencies that sell a one-day typically do not have free or discounted transfers. Unlimited ride passes provide a discount over cash fares, with the discount related to the number of times the pass is used as it represents a single payment over a time period. The issue with unlimited ride passes is that it typically requires a large upfront payment by customers to take advantage of the discount, which may be difficult for lower income users.

Multi-ride passes or stored value cards allow for passengers to buy a set number of transit trips ahead of time usually at a discount. These pass/stored value cards allow for the pre-paid purchase of discounted fares. Similar to the unlimited ride passes; these fares require a large upfront payment, although not as large as the unlimited ride passes, in order to take advantage of discounts. Multi-ride passes/Stored value cards can come in a variety of different types of media and formats including ticket books, tokens, punch cards, or as stored values on a fare card or SmartCard.

Some agencies have instituted free fares, which are typically prepaid in a hidden fee. Free fares primarily exist in places where the primary generator in the area is a major university. In these areas, funding sources for transit services come from the university. In other locations, college students are provided a free transit pass that is funded by student service fees, parking revenues at the college, general fund revenue, or a combination of these sources. An example of a system that has a free fare policy is Chapel Hill Transit in North Carolina, which serves the University of North Carolina[15].

Transfer policies are a very important consideration and part of any fare policy and fare media. Transit passengers have varied origin and destination locations so it is impossible to serve all passengers without requiring passengers to transfer. Many systems are designed around bringing passengers to a central location where they can connect to another bus to reach their destination. Other systems have transfers occur at points where two or more routes intersect. Regardless of transfer location, transfer policies have an impact on ridership. The existing transfer policies include allowing transfers to occur for free, transfers to occur at a low cost, or requiring passengers to pay full fare when transferring. Some

[15] http://www.townofchapelhill.org/town-hall/departments-services/business-management/fee-schedules/transit-policies-fee-schedules

systems have different policies based on fare media used, for example a free transfer if using a SmartCard while cash passengers have to pay full fare when transferring.

5.34 Standard Practices

Fare policies typically respond to local needs. In some locales the fare policy and changes to fare policies are well codified. In other locations, fare policies change only in response to an identified issue; otherwise fare policies may not change at all for a long time. Fare policies need to be responsive to local needs. The fare policy has to be cognizant of the need to provide an adequate local share of operating costs. That being said the fare policy has to also strike a balance between being equitable to all users, encourage pre-paid fares, encourage ridership, and the need to raise local revenue.

Federal rules and guidelines need to be taken into account in fare policy discussions. Environmental justice concerns also need to be taken into account as part of fare policy and fare policy changes as it relates to Title VI of the Civil Rights Act of 1964. Legal proceedings have forced modifications to fare policies and fare policy changes due to environmental justice concerns[16]. Environmental justice concerns are addressed by ensuring that fare policy changes are equitable for all services an agency operates. Fare policies also need to be consistent with rules and guidelines with the American's with Disabilities Act.

As stated previously, very few agencies have a policy regarding fare changes. Primarily, agencies adjust fare levels based on a specific need, usually the need for additional directly generated revenue. This could be in response to cuts in funding from other sources, changes in cost structure, or overall cost increases. On a philosophical level many agencies prefer to increase fares along with improvements in service so that passengers are receiving "better service" as part of higher fares.

The key elements of a fare policy include a base cash fare, multi-ride fare media, unlimited ride passes, and a transfer policy. Ten out of fifteen RTA's in Massachusetts use the Charlie Card SmartCard for fare payment which does have the ability to store unlimited ride passes. Beyond this fare policy, transit agencies have been partnering with colleges and universities to fund UPass programs which provide free trips for students and guaranteed revenues for the transit agency.

5.4 Comparison of GATRA to National Trends

This section presents how GATRA compares to national trends in terms of fare rates and fare collection technology. For the most part GATRA does not have any fare policies or practices that vary from national trends and practices. They offer base cash fare, multi-ride fare media, unlimited ride passes, and have a transfer policy. The few places where GATRA differs from national trends are with technology and the differing fare options for different routes. GATRAs routes are broken down by service area (Attleboro/Taunton, Southeast, Northeast and Northwest) and the Northeast and

[16] Transit Cooperative Research Program Report 94: Fare Policies, Structures, and Technologies page 5

Attleboro/Taunton service areas have GFI Odyseey validating fareboxes. The Northwest and Southeast service areas use Diamond fareboxes except the Bellingham, Medway and Middleboro routes which do not have fareboxes.

For fare collection, GATRA does utilize electronic validating fareboxes for fare payment in the majority of the routes. These fareboxes do have the capability to accept Smartcard payments, which is the direction fare collection is headed nationwide. GATRA should continue to evaluate this option and implement them if possible. Electronic fare boxes on all routes would allow GATRA to provide a variety of passes on all routes, track ridership, analyze the impacts of fare initiatives, offer 31 day passes versus monthly passes on all routes, reduce fare evasion/abuse, reduce operator conflicts for fare payments, increase boarding speeds, and implement innovative fare structures.

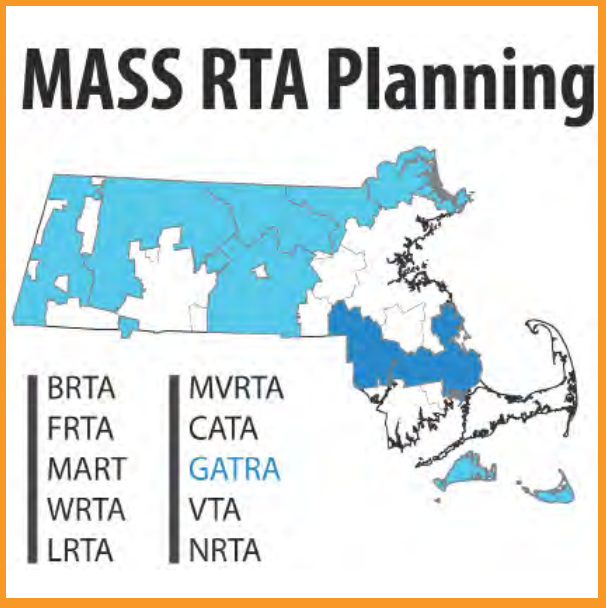
If GATRA were to update to the *Odyssey Plus* farebox the readers would be able to accept the current magnetic stripe cards, cash and Smartcard technology. The upgrade kit is easy to install and replaces the lid and computer on the existing fareboxes. The *Odyssey Plus* is able to read various forms of Smartcards such as contactless, traditional cards, tags, QR codes, smartphones, fobs, watches, etc. Several routes still use Diamond drop boxes to collect fares which are non-validating. This makes it difficult for GATRA to keep track of ridership and analyze fares. It does not make sense to install registering fareboxes onboard as space is limited on these vehicles and the GFI fareboxes require 82.4 sq. inches of floor space, are 3'5" tall and require additional space for the operator control unit. As an alternative, GATRA could install the GFI Fast Fare-e unit to collect electronic fares in addition to the Diamond drop boxes. The Fast Fare-e would allow GATRA to accept their current fare media on all vehicles and allow them to establish a uniform fare structure in all four service areas. These units are small (7"width x 11" height x 4" depth), can be mounted easily in the vehicle and cost less than the GFI Odyssey. Anaheim Resort Transportation (ART) recently installed the Fast Fare-e fare system on 30 of their vehicles at a unit cost of $3,300 per vehicle. GATRA should consider installing the Fast Fare-e and either Diamond drop boxes or GFI's Pacemaker[17] on routes that do not currently have fare boxes. The *Odyssey Plus* and the Fast Fare-e are also both capable of accepting mobile based payments for QR codes and integrate with the e-Fare which allows users to add funds to their Smartcard or purchase fares online.

GATRA does have a variety of fare passes that are consistent with the national trends. The base fare for the majority of the GATRA routes is $1.00 but dial-a-ride zones and longer routes which pass through 3 or more communities are $2.00. A number of unlimited ride passes are available for purchase by riders, with shorter durations available. Overall, the fare and pass structure is consistent with national trends.

[17] The Pacemaker is a non automated farebox designed for vehicles with limited floor space. Units are 24" tall and require 42 sq. inches of floor space.

GATRA has not had a fare increase in ten years when the base fare was raised from $0.75 to $1.00 nor does GATRA have a policy for establishing fare increases. While it is typical for transit providers to not have polices regarding fare increases systems benefit from having one. A fare increase policy allows for transparency and future planning. Fare increases should always be rounded to the nearest $0.05. Public perception is key when implementing fare increases. If fare increases are set in a plan and coupled with system improvements then the increases are better received by the public. Fare elasti city's for bus transit averages -0.40, meaning that for every 1% increase in fares ridership will drop 0.4% therefore it is important to price your fare increases correctly[18]. GATRA should establish a policy for fare increases on all types using a ten year outlook. Fare increases do not need to be uniform across all fare pass types. If GATRA were to install Smartcard technology they could tie the fare increase to the technology offering discounts to Smartcard users and a fare increase to non-users. This would encourage individuals to use the new technology and reduce cash transfers.

[18] http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_95c12.pdf



Chapter 6

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Regional Transit Authority

6. ENVIRONMENTAL

6.1 GreenDOT Policy

In 2010, MassDOT launched their sustainability and environmental responsibility initiative to "green" the state transportation system, called GreenDOT. All branches of the Commonwealth's transportation system (transit, air, highway and planning) are subject to the policies contained within the GreenDOT initiative. The policy is driven by three primary objectives: (1) reduce greenhouse gas emissions, (2) promote healthy transportation options, and (3) support smart growth and development. In order to meet these objectives and to become a national leader in sustainability and transportation, MassDOT created an implementation plan in 2012 that outlines 7 themes (Air, Energy, Land, Materials, Planning Policy & Design, Waste, Water) and 16 sustainability goals. As part of the GreenDOT policy, each indicator was given a priority for implementation. Indicators for immediate implementation are those that were to be implemented by 2013, medium-term by 2015 and long-range policy targets for 2020.

While the concept of improving sustainability and environmental responsibility would prove beneficial for Massachusetts, coordination and input from the 15 RTAs across the state has not yet occurred. In addition, while the GreenDOT policy outlines 331 indicators applicable to the rail and transit division, not all of these are relevant to the fifteen RTAs across the state[19]. Those that are not relevant are often the responsibility of the MBTA, Bay State Roads, metropolitan planning organizations, and/or MassDOT but not the RTA. Many of the policies extend beyond the responsibility and reach of any of the RTAs and the timeline for achieving the indicators are not realistic or necessarily right sized for the RTA's. Many of the RTA's (either individually or collectively) will require more time to implement these environmental initiatives. A logical step is for each RTA to coordinate and confirm with MassDOT which initiatives are the most appropriate and achievable actions that can be taken and how best to achieve them.

In addition to GreenDOT, Massachusetts recently passed regulation *310 CMR 60.05: Global Warming Solutions Act Requirements for the Transportation Sector and the Massachusetts Department of Transportation*. The purpose of the act is to assist the state in achieving their goals of reduced greenhouse gas emissions (GHG). There are various parts to the regulation that require interagency coordination between MassDOT, Metropolitan Planning Organizations (MPOs), Regional Transit Authority's (RTAs), the Department of Environmental Protection and the Executive Office of Energy and Environmental Affairs. The RTAs are specifically given 4 tasks:

- Conduct comprehensive service reviews (CSRs),
- Identify service enhancements to increase passenger ridership
- Identify vehicle technology and operational improvements that can reduce GHG emissions
- Work within the MPO process to prioritize and fund GHG reduction projects and investments

[19] Mass GreenDOT policy http://www.massdot.state.ma.us/GreenDOT.aspx

The RTAs along with MassDOT and the MPOs will be required to calculate GHG impacts on all RTP projects, consider GHG impacts when prioritizing and selecting projects, and report GHG impacts of all projects. Spreadsheet calculation tools have been developed for calculating GHG emissions and air quality analysis on bus replacements, new bus services, complete street programs and park and ride lots. The Department of Environmental Protection requires that the GHG impacts be measured for all projects and reported annually.

This section of the GATRA plan examines how the policy's themes and goals are being applied to regional transit authorities and which ones in particular GATRA is currently meeting. There are a total of 331 indicators identified in the GreenDOT policy for the rail and transit division of MassDOT, of which only 225 or 68% are applicable to GATRA. Of the 225 applicable indicators, 108 are short term indicators which are recommended to be in place by 2013, 92 are medium term indicators to be implemented in 2015 and the remaining 25 indicators should be implemented by 2020. GATRA has met 51 (47%) of the short term, has met or is working towards meeting 52 (57%) of the medium term and 11 (44%) of the long-range indicators (Figure 37). Overall, GATRA is meeting 91 (40%) of the 225 applicable indicators (Figure 36), even though 52% are not required to be met until the end of 2015 or 2020 according to GreenDOT.

GATRA is working continuously to achieve the indicators and has accomplished many of them ahead of schedule. Some of the applicable indicators are joint responsibilities of GATRA, MassDOT, the planning commission or the municipality and they must work collaboratively to achieve success. Additionally, of the 106 indicators that do not apply, some reasons may be because they are specific to the MBTA, specific to rail, require that there has been or will be new construction, they are for MassDOT owned facilities, they are for environmentally sensitive land areas, and/or there may be other constraints beyond GATRAs control.

Table 9. GreenDOT Goals, Objectives and Indicators

Theme	Goals	Objectives	Indicators	Applicable Indicators
Air	2	11	49	36
Energy	2	7	39	23
Land	2	9	45	20
Materials	3	14	63	52
Planning, Policy & Design	3	12	56	39
Waste	2	9	33	27
Water	2	9	46	28
Total	**16**	**71**	**331**	**225**

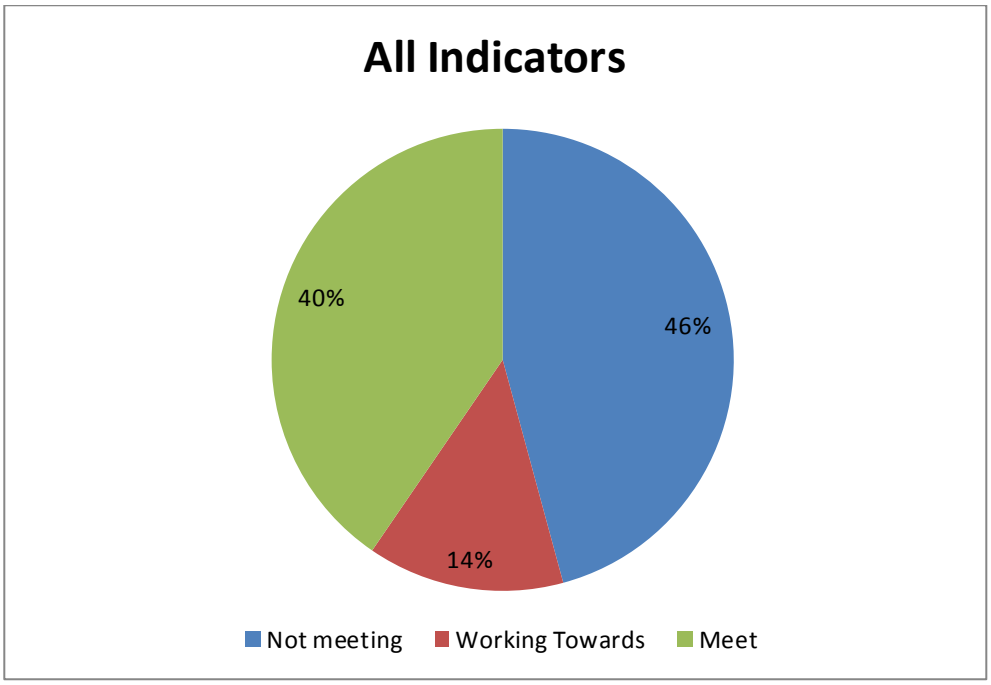

Figure 36. All indicators Level of Attainment

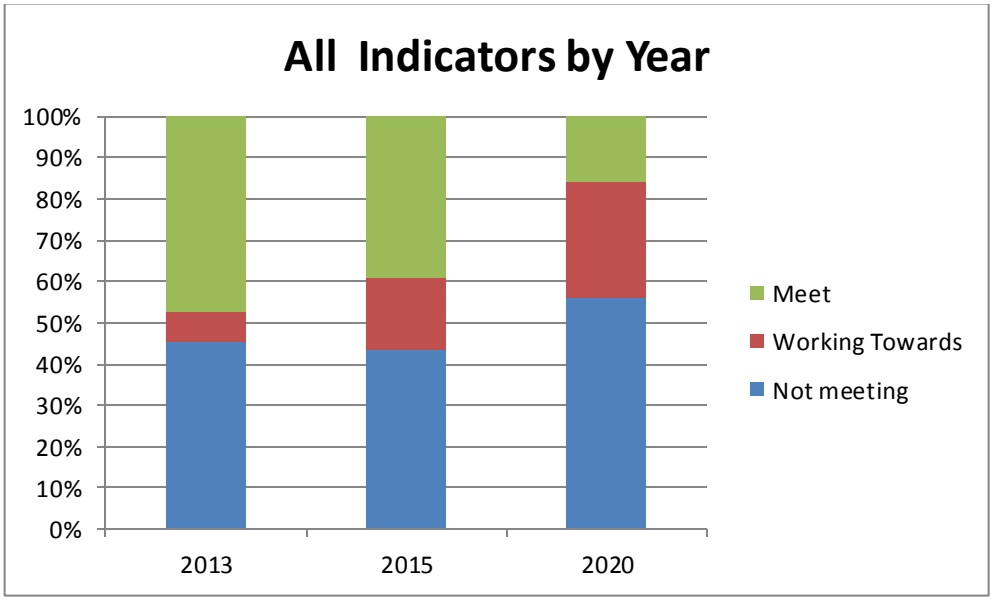

Figure 37. All Indicators Attainment by Year

6.21 Air

Air goals include improving the state's air quality and reducing greenhouse emissions. There are 49 indicators for air but only 36 (73%) are applicable to GATRA. GATRA is meeting 7 (20%), working towards 3 (8%) and not meeting 26 (72%) of the applicable air indicators as seen in Figure 38. Figure 39 outlines the air indicators by implementation time and level of achievement. There are 13 indicators in the air theme which are not applicable to GATRA. For the applicable indicators 14 are short term indicators, 13

are medium-term, and 9 long-range. Of those that are applicable to GATRA they have met 3 (21%) of the immediate implementation (2013) indicators, and are working towards or meeting 5 (38%) of the medium-term (2015) indicators and 2 (22%) of the long-range indicators.

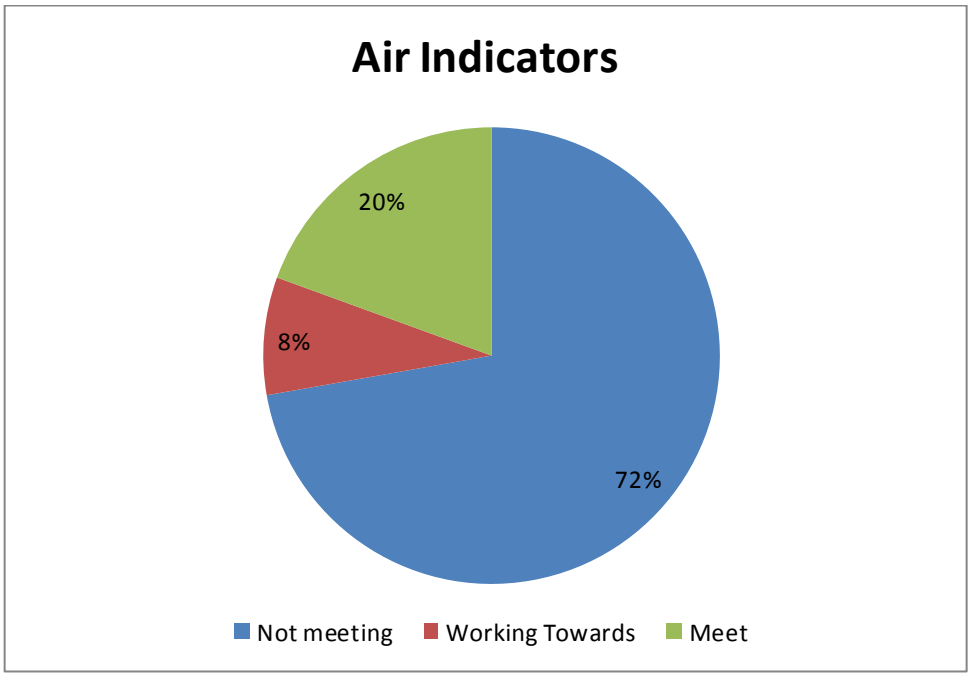

Figure 38. Air Indicators Level of Attainment

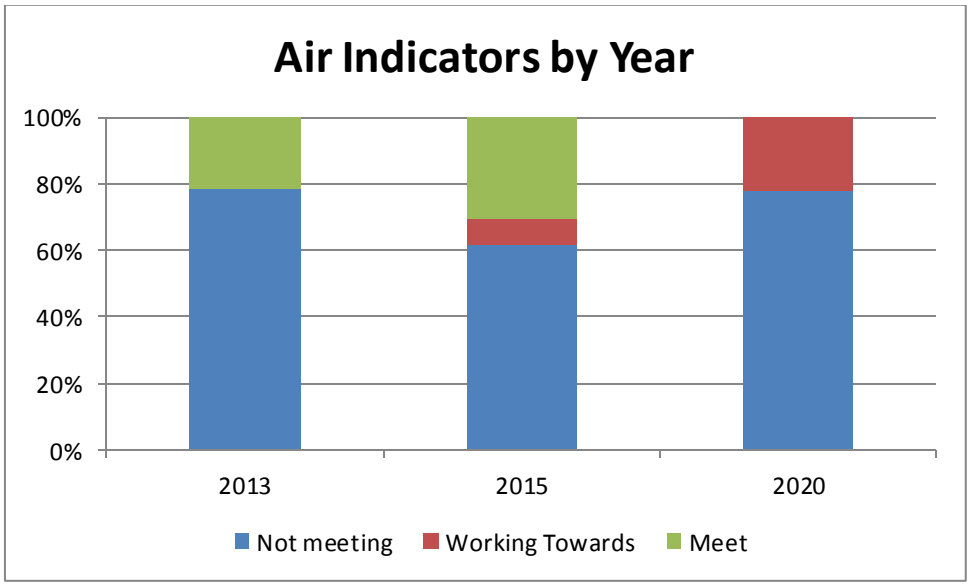

Figure 39. Air Indicators Attainment by Year

Table 10. Air Goal Achievement

Goal 1: Improve Statewide Air Quality	
Objective: Reduce emissions from maintenance & construction equipment	
Indicator	**Contribution**
Retrofit + use of hybrid engine system for each vehicle class piloted	No
Diesel retrofit program for on and off-road vehicles expanded	No
Hours of non-revenue vehicle operation reduced by 5% through operations streamlining	No
Electric and/or full exhaust cycle motors have replaced 2-stroke equipment	No
All new heavy equipment purchased run hybrid, CNG, or other high efficiency engines	No
Objective: Decrease total engine idling	
Indicator	**Contribution**
On-board electrification of maintenance equipment for each vehicle type piloted	Yes
MassDOT compliance with anti-idling laws ensured	Yes
On + off-road anti-idling policies included in all construction, maintenance + service contracts	No
Anti-idling policies, more restrictive than state law developed to eliminate unnecessary idling	No
Anti-idling technology in transit vehicle + maintenance truck operations utilized	No
90% of MassDOT over-road maintenance vehicles run hybrid engines or have on-board electrification	Not Applicable - No DOT vehicles
Objective: Decrease volatile organic compound discharge from facilities	
Indicator	**Contribution**
Spray painting restricted to permitted booths + emissions controls installed at spray shops	Yes
All maintenance yard gasoline fueling pumps retrofitted with vapor recovery systems	Yes
Technologies for diesel + jet fuel vapor recovery explored + implemented where feasible	No
Air emission control training provided to all maintenance employees	No
Objective: Increase fuel efficiency of operating transit fleet	
Indicator	**Contribution**
100% of transit bus fleet replaced or retrofitted with hybrid systems or best in class fuel efficiency vehicles	No
Statewide diesel transit + school bus retrofit program optimized + balanced with efficient vehicle purchases	Yes
20 new high efficiency commuter rail diesel locomotive in service	Not Applicable - Do not operate Commuter rail
40 new high efficiency commuter rail locomotives purchased	Not Applicable - Do not operate Commuter rail

Objective: Increase efficiency of transportation systems operations	
Indicator	**Contribution**
Bus route efficiency measures implemented by all transit operators	Working towards - No MassDOT vehicles
Planned bridges and ROWs designed to increase options for double tracked lines + allow double-stack cars	Not Applicable - Do not operate rail
Six rail corridors upgraded to increase speed including separated grade crossings or other improvements	Not Applicable - Do not operate rail
Dwell time of commuter rail trains at stations decreased	Not Applicable - Do not operate Commuter rail
Program initiated to increase the number of high level commuter rail platforms	Not Applicable - Do not operate Commuter rail
Electronic tolling facility of road and parking facilities launched	No

Goal 2: Reduce Greenhouse Gas Emissions

Objective: Increase vehicle electrification facilities	
Indicator	**Contribution**
At least 30 electric vehicle (EV) chargers installed along state highway system + transit parking areas	No
All major park and ride, + transit parking lots (>50 vehicles) have charging stations	No
Feasibility analysis of expanding the use of battery + fuel cell powered buses completed	No
Optimal Statewide EV plug-in station network planned + implemented	Not Applicable - State Initiative
The feasibility of electric commuter rail locomotives studied within the Commuter Rail Master Plan	Not Applicable - Do not operate Commuter rail
Objective: Increase use of alternative + renewable fuels	
Indicator	**Contribution**
Bio-fuel (such as B10-B20 biodiesel) tested in oil heated buildings	Not Applicable - No oil heat
20% biodiesel (B20) blend purchased for oil heated buildings	Not Applicable - No oil heat
Recycled vegetable oil / non-food stock impairing fuel purchased for biodiesel blends	Not Applicable - No oil heat
Volume purchasing of alternative fuels established across facilities + divisions	No
B10 + B20 biodiesel pilot begun in all diesel vehicle types	No
B10 to B20 biodiesel utilized in all diesel vehicles, depending on availability, vehicle type + season	No

Objective: Increase fuel efficiency of light duty vehicles	
Indicator	**Contribution**
Vehicle fleet inventoried + prioritized for replacement and retrofit based on emissions reduction	No
A portion of light duty fleet in urban areas integrated with car-share programs	No
Light duty fleet downsized with carpooling, interdepartmental vehicle use, + car-sharing	No
All light duty vehicles replaced or retrofitted with hybrid, electric, CNG or best in class technology	No
50% of DOT light vehicle fleet replaced or retrofitted with zero or partially zero emission vehicles	Not Applicable - No DOT vehicles
Objective: Increase fuel efficiency of maintenance + construction equipment	
Indicator	**Contribution**
Performance measures added to maintenance + construction contracts for green fleets	No
15% of maintenance fleet replaced with best in class emission ratings	Yes
Objective: Increase telecommuting + meetings by web conference	
Indicator	**Contribution**
Teleconference technology capabilities installed at all offices	Yes
Take home vehicle fleet for office employees eliminated	No
Telecommuting + flex time options expanded for employees	No
Peak hour single occupancy vehicle trips by employees reduced by 20%	Working towards - It has been reduced but not by 20%
Objective: Track progress toward statewide GHG reduction + other sustainability goals	
Indicator	**Contribution**
All resource use + purchases reported for performance monitoring	No
MassDOT's GHG emissions target of 40% reduction from a 2002 baseline is met	Working towards - It has been reduced but not by 40%

6.22 Energy

Energy goals are focused on consuming less energy and increasing the percentage of energy which comes from renewable sources. There are 39 indicators for energy but only 23 (59%) are applicable to GATRA. GATRA is meeting 11 (48%), working towards 4 (17%) and not meeting 8 (35%) of the applicable energy indicators as seen in Figure 40. Figure 41 outlines the energy indicators by implementation time and level of achievement. There are 16 indicators in the energy theme which are not applicable to GATRA. For the applicable indicators 9 are short term indicators, 9 are medium-term, and 5 long-range. Of those that are applicable to GATRA they have met 4 (44%) of the immediate implementation (2013) indicators, and are working towards or meeting 8 (89%) of the medium-term (2015) indicators and 3 (60%) of the long-range indicators.

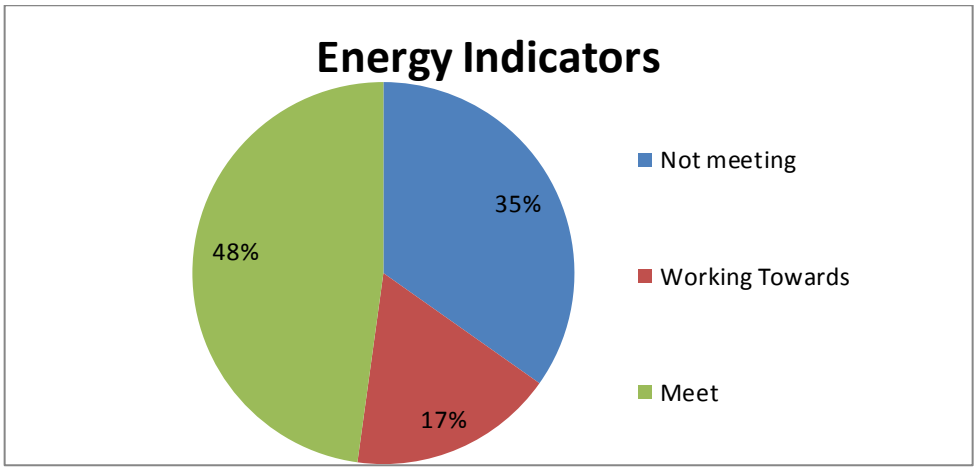

Figure 40. Energy Air Indicators Level of Attainment

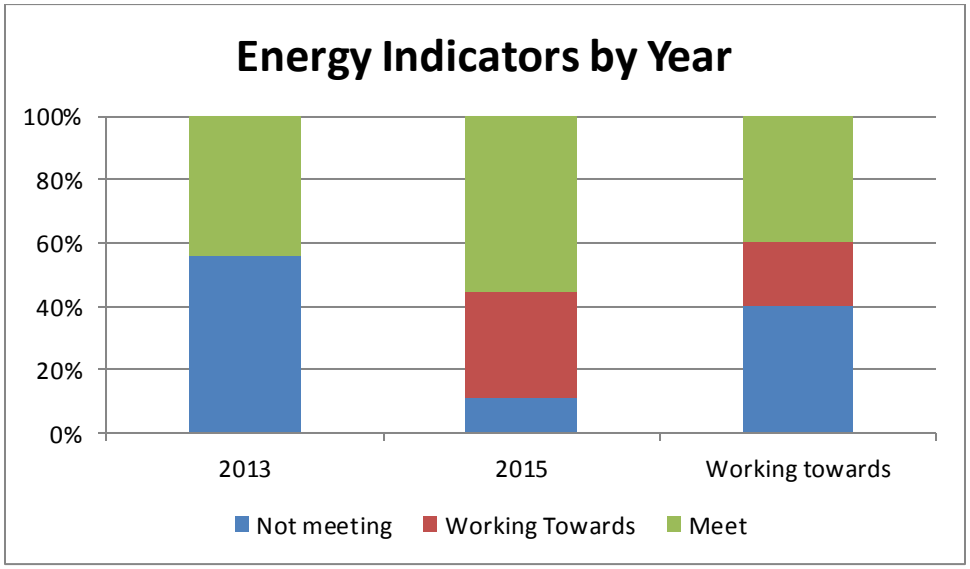

Figure 41. Energy Indicators Attainment by Year

Table 11. Energy Goal Achievement

Goal 1: Consume Less Energy	
Objective: Reduce building electricity use	
Indicator	**Contribution**
Electrical + HVAC use of all buildings + facilities audited	Yes
Office electrical equipment shutdown program implemented	No
Employee education and incentive programs established to encourage energy use reduction	No
All buildings not updated in 10 years renovated / overhauled / consolidated	Working towards - Some but not all
Motion sensor/occupancy lighting installed in all buildings	Working towards - some but not all
Electricity purchased by the MBTA reduced by 20% per passenger mile	Not Applicable - Not the MBTA

Objective: Reduce electricity use by outdoor lighting	
Indicator	**Contribution**
Use of incandescent bulbs eliminated	Yes
Outdoor lighting assets + technology inventoried	Yes
50% of all outdoor lighting (ROW, parking lots, tunnels, runways, airfields) retrofitted	Working towards - Some but not 50%
100% of all outdoor lighting retrofitted	Working towards - Some but not all
Electricity consumption for lighting reduced by 50% through retrofits and operations	No
All traffic signals replaced with LED bulbs	Not Applicable - No signals
Objective: Reduce fuel use for heating buildings + water	
Indicator	**Contribution**
Audit of all heating systems + water fixtures conducted + opportunities for retrofit identified	Yes
Temperatures of all adjustable boilers/heaters reduced	Yes
All inefficient / electric water heaters replaced with high efficiency tanks or tankless systems	Yes
Oil heating systems converted to natural gas or renewable alternatives where feasible	Yes
Geothermal + cogeneration heating systems studied for all new buildings	No
Envelops of all buildings are evaluated and prioritized for insulation upgrades	Yes
Total heating fuel + costs for MassDOT-owned buildings reduced by 20%	Not Applicable - Not MassDOT
Total heating fuel + costs for MassDOT-owned buildings reduced by 35%	Not Applicable - Not MassDOT
Insulation of all heated / air conditioned buildings assessed and replaced as needed	Yes
All MassDOT-owned HVAC systems +/or windows retrofitted or replaced	Not Applicable Not MassDOT
Shade tree planting around MassDOT buildings increased to improve building energy performance	Not Applicable - Not MassDOT
50% of all inefficient / electric water heaters replaced with high efficiency tanks or tankless systems	Yes
Objective: Reduce electricity consumption by subways + trolleys	
Indicator	**Contribution**
Evaluation of on-board and/or wayside energy recapture conducted for all subway lines	Not Applicable - Do not operate rail
Electrical systems of all subway lines evaluated and retrofitted where cost effective	Not Applicable - Do not operate rail
All outdated transit vehicles replaced with high efficiency cars	Not Applicable - Do not operate rail
New subway car purchases contain regenerative braking technology	Not Applicable - Do not operate rail
RFR issued for wayside station regeneration installation	Not Applicable - Do not operate rail

Goal 2: Increase Reliance on Renewable Energy	
Objective: Participate in MassDOT Energy Initiative	
Indicator	**Contribution**
Create a MassDOT energy management plan	Not Applicable - MassDOT responsibility
All energy consumption (electricity / heating / fleet fuel) tracked + centrally reported	Yes
Feasibility study completed for additional wind power generation sites on MassDOT properties	Not Applicable - Not MassDOT
Objective: MassDOT GreenDOT Implementation Plan Increase energy produced at MassDOT facilities	
Indicator	**Contribution**
Comprehensive feasibility assessment and renewable energy generation plan completed	No
4 RFR's issued by MassDOT for additional renewable generation sites	Not Applicable - MassDOT responsibility
10 new renewable energy projects installed at MassDOT facilities	Not Applicable - MassDOT responsibility
At least 5% of electricity demand generated by MassDOT renewable projects	Not Applicable
Objective: Purchase more renewable energy	
Indicator	**Contribution**
Bulk purchasing of green electricity portfolio with other state agencies initiated	No
12% of electricity needs met through production or green energy purchases	No
25% of electricity needs met through production or green energy purchases	No

6.23 Land

Land goals are aimed at using sustainable vegetation maintenance practices and protecting significant habitat areas and natural landscapes. There are 45 indicators for land but only 20 (44%) are applicable to GATRA. GATRA is meeting 8 (40%), working towards 0 (0%), and not meeting 12 (60%) of applicable land indicators as seen in Figure 42. Figure 43 outlines the land indicators by implementation time and level of achievement. There are 25 indicators in the land theme which are not applicable to GATRA. For the applicable indicators 10 are short term indicators and 10 are medium-term. Of those that are applicable to GATRA they have met 5 (50%) of the immediate implementation (2013) indicators and are working towards or meeting 3 (30%) of the medium-term (2015) indicators.

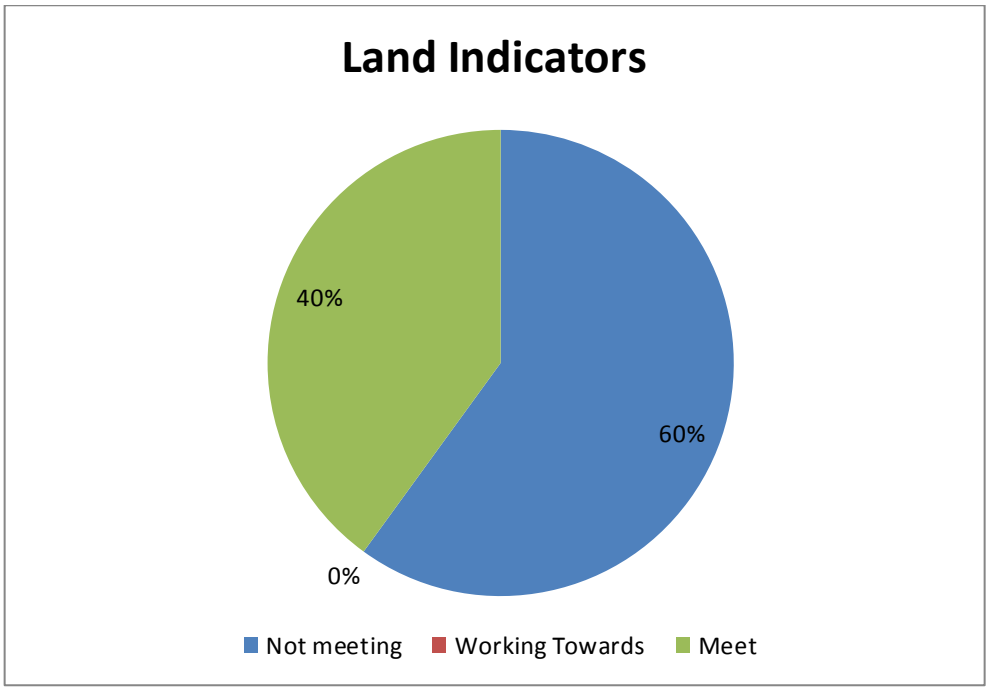

Figure 42. Land Indicators Level of Attainment

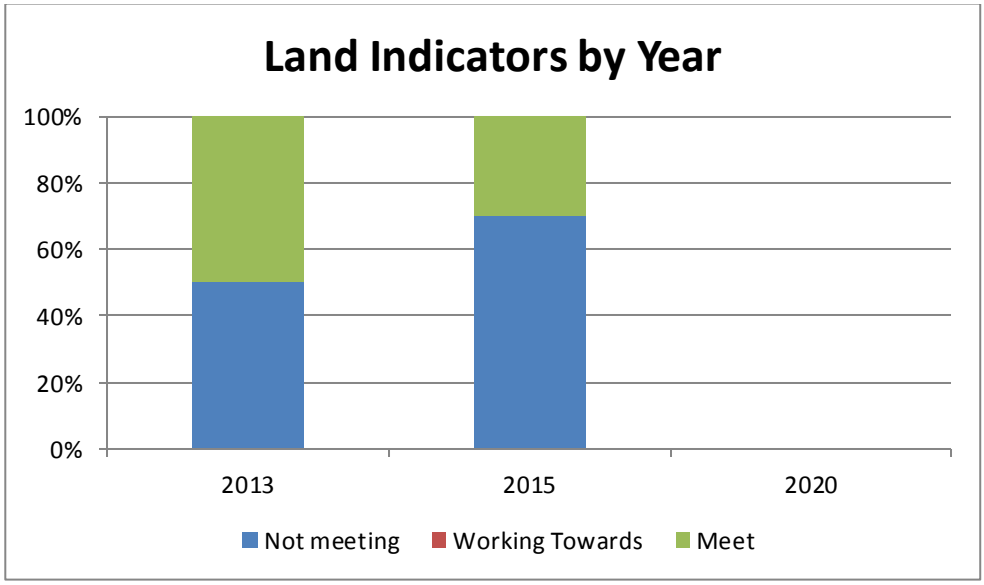

Figure 43. Land Indicators Attainment by Year

Table 12. Land Goal Achievement

Goal 1: Minimize Energy + Chemical Use in Maintenance	
Objective: Increase acreage of land planted with native / low maintenance vegetation	
Indicator	**Contribution**
New facilities planted with sustainable, minimally managed native landscape	Yes
Lawn installations around five facilities replaced with natural (low maintenance) vegetation	Yes
Native plant restoration or managed fallow habitat restoration increased 25% along ROWs	Not Applicable - No fallow habitat
Available land surrounding all rural depots and offices planted with native vegetation	Not Applicable - Not in a rural area
Objective: Decrease area + frequency of land mowed	
Indicator	**Contribution**
Inventory of grassed area conducted	No
Turf grass replaced with broad spectrum blend of grasses including warm season + slow growing for low maintenance	No
Mowing frequency reduced by 25%	Yes
Mower blades raised in turtle habitat + areas contiguous with natural areas as standard operating procedure	Not Applicable - not in natural area
Mowing + brush cutting jobs are scheduled around animal nesting season to the maximum extent possible	Not Applicable - do not have large mowing area
Objective: Implement an integrated vegetation management approach for ROWs + facilities	
Indicator	**Contribution**
Landscape areas inventoried by habitat area + maintenance regime	No
Adopted Vegetation Management Plans focus on integrated management approach	No
Soil augmentation utilize organic landscape techniques + minimize nutrient loads to water supplies	Not Applicable - soil augmentation not used
Compost materials used as the preferred soil amendment in all maintenance + construction projects	No
Objective: Require intelligent use herbicides + pesticides in construction + maintenance	
Indicator	**Contribution**
Mechanical weed control utilized to minimize traditional herbicide use	Not Applicable - no weed control performed
Herbicides used only in conjunction with integrated + sustainable roadside/railway vegetation management plans	Not Applicable - no herbicide used
Increase number of employees trained for herbicide application to allow more selective application	Not Applicable - no herbicide used
Integrated pest management (IPM) implemented for all maintenance projects + construction sites	Not Applicable - No new projects
Ongoing training for employees + technical assistance for municipalities on organic/IPM practices established	Not Applicable - GATRA's facility is in an urban setting. These provisions do not pertain to GATRA

Objective: Protect, preserve + enhance woodland + urban tree coverage	
Indicator	**Contribution**
2 to 1 tree replacement policy implemented where woodland preservation desired	Not Applicable - GATRA facility is in an urban setting. These provisions do not pertain to GATRA
Mature, healthy tree preservation is maximized in maintenance and project design where feasible	Yes
Trees and naturalized landscaping emphasized in revised Project Development + Design Guide	Not Applicable - In an urban setting GATRA emphasizes as much tree and landscape as possible
Sustainable roadside woodland management plan established for construction and maintenance	Not Applicable - GATRA does not have any roadside management responsibility.
Urban street tree coverage enhanced during improvement projects	Yes
Coordinated tree planting policy established to encourage locally supported urban forestry practices	No
100,000 trees planted along roadways as part of MassDOT's Complete Streets practices	Not Applicable - This is a MassDOT responsibility to include transit

Goal 2: Enhance Ecological Performance of MassDOT Impacted Land

Objective: Increase habitat preservation + enhancements	
Indicator	**Contribution**
Proactively coordinate project development with MA Department of Fish + Game	No
Restored + maintained areas increased for non-urban construction projects	No
25 nest boxes installed at appropriate locations	No
Surplus land with high natural resource value evaluated for transfer to appropriate state agencies	Not Applicable - no surplus land
Grassland and/or Woodland Management Plans in place for all appropriate facilities	Not Applicable - GATRA's facility is in an urban environment. These issues do not pertain
Wildlife + endangered species training program provided for applicable employees	Not Applicable - GATRA's facility is in an urban environment. These issues do not pertain
Ten rare species habitat management/ enhancement projects initiated within right-of-way	Not Applicable - No rare species
Objective: Increase wildlife accommodation along ROWs + facilities	
Indicator	**Contribution**
Wildlife hazard mitigation plan(s) implemented for all facilities	No
Reptile + amphibian + fish passage structures incorporated into maintenance activities	Not Applicable
Project forms revised to include wildlife accommodations measures early in design review	No
Wildlife fencing along ROWs/properties within all critical habitat areas evaluated + installed	Not Applicable - no critical habitat

Objective: Decrease quantity of invasive + noxious species	
Indicator	**Contribution**
Planting of all listed noxious or invasive species prohibited	Yes
All stockpiled materials screened for noxious or invasive species	Not Applicable - GATRA's facility is in an urban environment and does not lend itself to many opportunities for invasive species.
Transportation of cut wood materials limited to avoid beetle + other pest transportation	Not Applicable - GATRA's facility is in an urban environment and does not lend itself to many opportunities for invasive species.
Aggressive species early detection + rapid response program in place	No
Invasive species control on sites are managed with minimal adverse impact on other species	Not Applicable
Active invasive species management programs in place within priority habitat areas	Not Applicable - not in natural area
All maintenance crews trained on invasive species detection	Not Applicable - GATRA does not have maintenance staff on hand for landscaped areas
Objective: Decrease outdoor light pollution	
Indicator	**Contribution**
New lighting designed to conserve energy + avoid light pollution	Yes
Light shields installed in coordination with roadway + parking lot lighting fixture retrofits	Yes

6.24 Materials

Material goals include using environmentally friendly products; using innovative materials and construction techniques that leave smaller environmental footprints; and having green facilities. There are 63 indicators for materials but only 52 (83%) are applicable to GATRA. GATRA is meeting 20 (38%), working towards 3 (6%) and not meeting 29 (56%) of the applicable material indicators as seen in Figure 44. Figure 45 outlines the material indicators by implementation time and level of achievement. There are 11 indicators in the materials theme which are not applicable to GATRA. For the applicable indicators 29 are short term indicators, 20 are medium-term, and 3 long-range. Of those that are applicable to GATRA they have met 14 (48%) of the immediate implementation (2013) indicators, and are working towards or meeting 6 (30%) of the medium-term (2015) indicators and 1 (33%) of the long-range indicators.

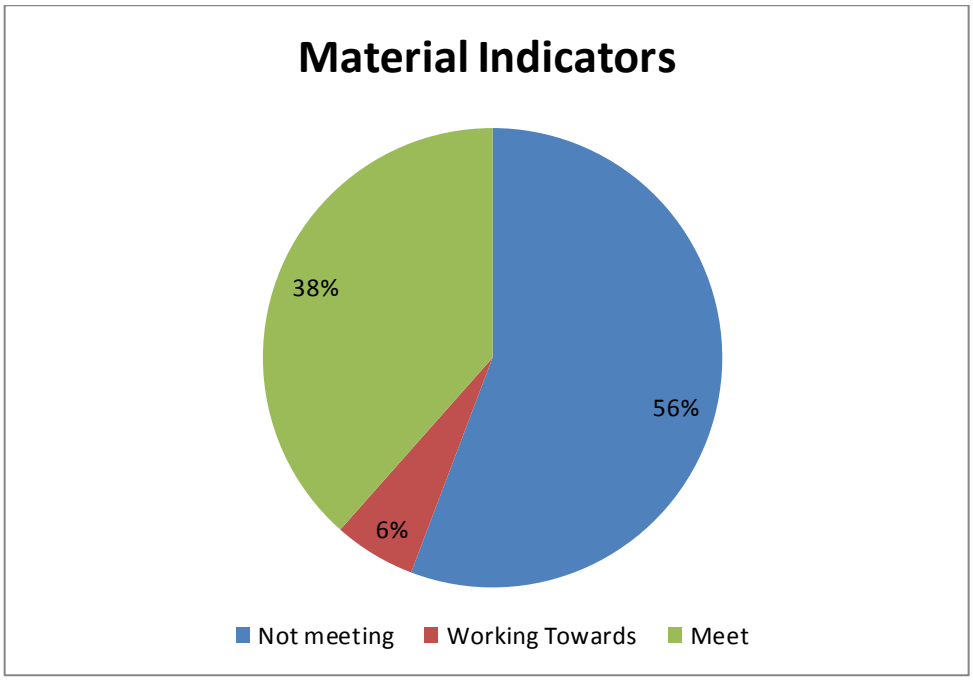

Figure 44. Materials Air Indicators Level of Attainment

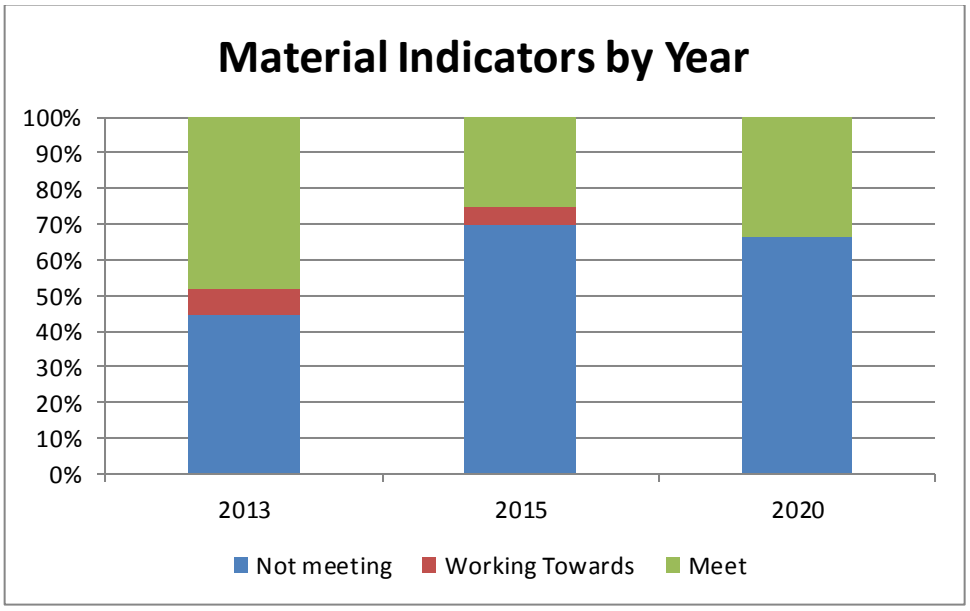

Figure 45. Material Indicators Attainment by Year

Table 13. Material Goal Achievement

Goal 1: Purchase Environmentally Preferred Products	
Objective: Implement an environmentally preferred materials purchasing program	
Indicator	**Contribution**
Environmentally preferred materials purchasing programs implemented in collaboration with OSD	No
Low or no volatile organic compound furniture + flooring purchased	Yes
100% recycled content paper products purchased	Working towards - Some but not 100%
Reclaimed + recycled materials utilized for landscaping + earthwork	Yes
Only refrigerators with low Global Warming Potential (GWP) refrigerants and insulation purchased	Yes
Sustainable Forestry Certified wood for permanent or temporary construction utilized	No
Standards for recycled content of traffic control/safety devices developed	No
Sustainability practices integrated into all construction and service contract evaluation criteria	Yes
Objective: Purchase energy efficient equipment	
Indicator	**Contribution**
Only Energy Star or Electronic Product Environmental Assessment Tool certified electronic products purchased	Yes
Total electronic appliances within office locations reduced	No
Energy efficient criteria utilized for shop equipment + machinery purchases	Yes
Objective: Use environmentally friendly cleaning products + procedures	
Indicator	**Contribution**
Maintenance products + procedures utilized that pose least harm to humans + the environment	Yes
Protocols for disposal of all cleaning product waste established	Yes
Environmentally friendly cleaning products purchased when available	Yes
Environmental friendly cleaning products required to be used within vendor service contracts	No

Objective: Reduce hazardous chemical use in operations + maintenance	
Indicator	**Contribution**
Hazardous materials substitution program developed	No
Hazardous materials spill prevention control and countermeasures plan created	Yes
Lead free wheels purchased and steel weighted wheels phased in to replace older wheels	Yes
Natural or organic fertilizers, pesticides, + landscaping materials purchased	Yes
Low or no volatile organic compound paints applied on indoor facilities	Yes
Purchasing lists + disposal protocols for engine service + maintenance standardized	Yes
Technology implemented reducing the quantity of salt applied to roadways proportional to weather conditions	No
Objective: Increase opportunities for local vendors or locally sourced products sold at facilities	
Indicator	**Contribution**
Vendor solicitation for MassDOT facilities written to encourage local ownership / sourced products	Not Applicable - Not MassDOT
Lease language for MassDOT facilities written to encourage locally sourced products	Not Applicable - Not MassDOT
Local vendors + locally sourced products sold at MassDOT facilities doubled	Not Applicable - Not MassDOT

Goal 2: Improve Life-Cycle Impacts of Investments

Objective: Reduce energy inputs into paving operations	
Indicator	**Contribution**
Warm asphalt mix chosen as the standard state specification and hot mix asphalt eliminated	No
Two pilots of cold in-place paving completed	No
Standard specifications + guidelines for expansion of cold in-place paving established	No
Two pilots of full depth reclamation advertised	Not Applicable - No new paving
Standard specifications + guidelines for expansion of full depth reclamation projects established	Yes
Research to increase the recycled content, reduce energy inputs, and improve vehicle efficiency of paving completed	Not Applicable - MassDOT responsibility

Objective: Increase total volume of materials sourced within 200 miles of construction site	
Indicator	**Contribution**
Total weight/volume/cost of material purchased locally (within 200 miles) measured in all projects	No
Product source information added to bidding requirements	Yes
Cost share of locally sourced materials increased 20% on state funded projects	No
Objective: Increase % of recycled materials in paving + concrete installations	
Indicator	**Contribution**
20% of recycled paving material content used in road resurfacing projects	No
25% recycled paving material content used in road reconstruction projects	No
The highest recycled content paving and base material available utilized for shared-use paths	Not Applicable - GATRA does not have any shared use paths at its facilities which this would pertain to. GATRA allows bikes on its buses at all times on its bike racks.
Use of recycled rubberized asphalt + rubberized asphalt sealer increased	No
Minimum 25% fly ash, slag concrete, or silica flume utilized	No
Innovative sustainable concrete construction techniques encouraged in contracts	Yes
20% recycled course aggregate concrete used in all suitable applications	Working towards - Some but not 20%
Objective: Increase albedo factor in hardscapes, rooftops + paving	
Indicator	**Contribution**
Solar Reflectivity Index minimum of 78 instituted for all roofing projects	Yes
Two innovative roofing (green, vegetation or blue water) projects piloted	No
All new roofing installations utilize high measured albedo factor materials	No
Albedo factor increased in paving surfaces + hardscape materials	No
Urban roadways + parking lots designed to maximize shade coverage of asphalt + concrete surfaces	No
Solar Reflectivity Index of at least 30 required for paving projects	No

Objective: Design for deconstruction + reuse	
Indicator	**Contribution**
Road rehabilitation standards developed for reuse of existing installations	No
Expertise in designing for deconstruction specified in all RFRs for design contracts	No
Procurement criteria include incentives to contractor bids utilizing higher recycled content materials	No
Lifecycle analysis in design, project alternative + material selection included	No
Readily reusable + renewable materials encouraged in design specifications	No

Goal 3: Build Green Facilities for MassDOT

Objective: Design all new facilities to green building standards	
Indicator	**Contribution**
New facilities funded or built by MassDOT over 20,000 sq. ft. designed to MA LEED Plus	Not Applicable - no new construction
New facilities funded by MassDOT designed to LEED Gold or Net Zero Energy Building standard	Not Applicable - no new construction
Objective: Retrofit existing facilities to meet environmental design criteria	
Indicator	**Contribution**
All window AC units removed from office buildings or replaced with Energy Star units	Yes
Three building retrofits to LEED Existing Buildings Operations + Maintenance (EBO+M) initiated	No
Air circulation/filtration of MassDOT owned indoor facilities improved	Not Applicable - Not in MassDOT facility
Objective: Relocate offices + encourage healthy transportation options	
Indicator	**Contribution**
Offices in town or city centers relocated to be served by transit, walking + bicycling	Working towards - Some towns but not all
Provide transit pass exchange for employees with subsidized parking benefits	Yes
Free parking + take home vehicles for MassDOT urban office employees eliminated	Not Applicable - Not MassDOT employees
Objective: Consolidate office + maintenance facilities where feasible	
Indicator	**Contribution**
MassDOT office + maintenance facility consolidation opportunity study completed	Not Applicable - MassDOT responsibility
One office consolidation site piloted	No
Three pilot consolidation and/or cross utilization maintenance sites piloted	No

6.25 Planning, Policy & Design

Planning, policy and design goals are aimed at developing a multi-modal system designed to promote healthy transportation and livable communities. There are 56 indicators for planning, policy and design but only 39 (70%) are applicable to GATRA. GATRA is meeting 27 (69%), working towards 5 (13%) and not meeting 7 (18%) of the applicable indicators as seen in Figure 46. Figure 47 outlines the planning, policy and design indicators by implementation time and level of achievement. There are 17 indicators in the theme which are not applicable to GATRA. For the applicable indicators 17 are short term indicators, 21 are medium-term, and 1 long-range. Of those that are applicable to GATRA they have met 14 (82%) of the immediate implementation (2013) indicators, and are working towards or meeting 17 (81%) of the medium-term (2015) indicators and 1 (100%) of the long-range indicators.

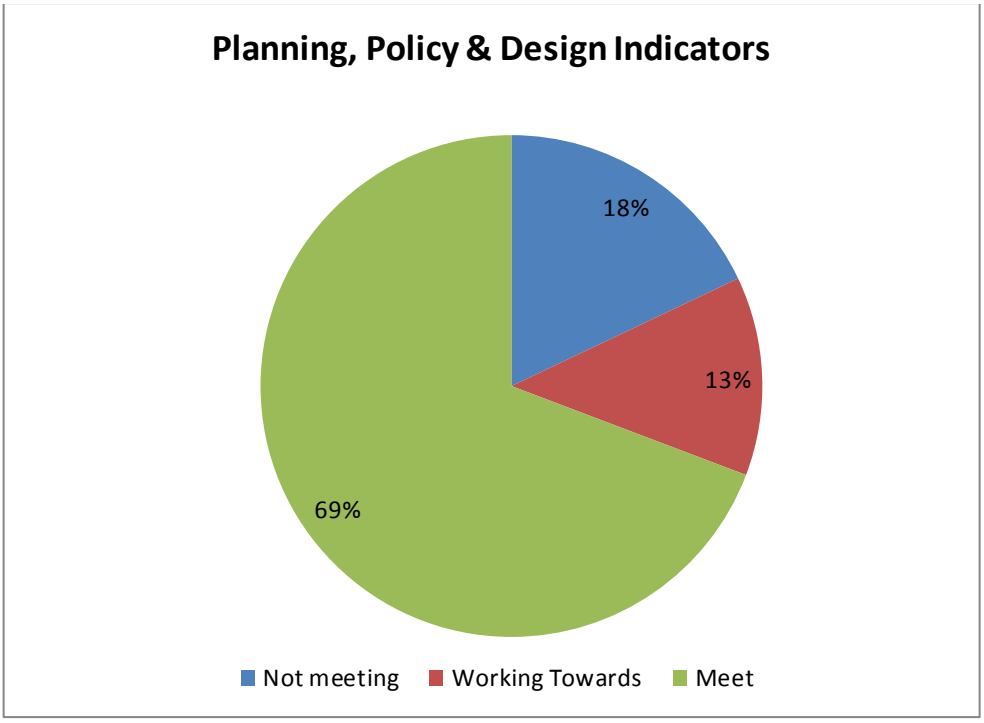

Figure 46. Planning Indicators Level of Attainment

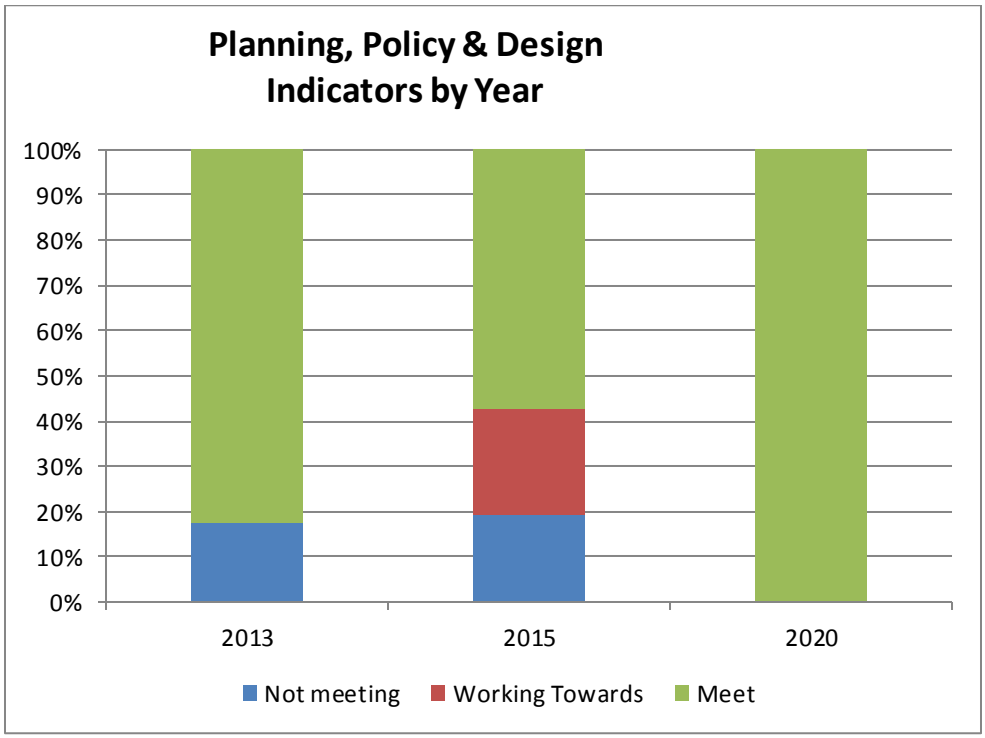

Figure 47. Planning Indicators Attainment by Year

Table 14. Planning, Policy & Design Goal Achievement

Goal 1: Design a Multi-Modal Transportation System	
Objective: Increase delivery of Complete Streets projects	
Indicator	**Contribution**
Bicycle + pedestrian facilities featured + prioritized in designs, rather than simply accommodated	Yes
Project forms + databases revised to track Complete Streets + sustainability measures	No
Update of Project Development + Design Guide underway to reflect evolution of Complete Streets	Yes
Surfaces and facilities of at-grade rail crossings improved for pedestrian + bicycle travel	Not Applicable - No at grade crossings
All 'driveway' approaches to MassDOT airports, rail stations + MassDOT provide bicycle + pedestrian access	Yes

Objective: Increase bicycle parking + access to transit	
Indicator	**Contribution**
Transit stations with significant customer car parking (>50 spaces) have covered +/or secure bicycle parking	No
All MBTA + RTA buses equipped with bicycle racks	Yes
Study + pilot programs completed evaluating options for eliminating peak hour restrictions of bikes on transit	Not Applicable - GATRA allows bikes on its buses at all times on its bike racks.
Bike stations at North, South, and Back Bay stations established with showers + locker facilities	Not Applicable - Do not operate these stations
High capacity bicycle coaches operated on all commuter rail lines + peak-hour access restrictions lifted	Not Applicable - Do not operate Commuter rail
Bicycle access to heavy rail lines expanded to all hours except two 1-hour peak periods	Not Applicable - Do not operate rail
Objective: Improve traffic controls to reduce vehicle emissions, + to support walking + biking	
Indicator	**Contribution**
Inventory of traffic signals + grade crossing signal conducted	Not Applicable - No signals or at grade crossings
All signals evaluated and adjusted for optimal operations for all users	Not Applicable - No signals
Objective: Improve transit system performance statewide	
Indicator	**Contribution**
Bus stop consolidation on key routes assessed	Yes
All RTA's have conducted comprehensive service analysis to improve system connectivity + efficiency	Yes
Opportunities for express bus lanes + regional bus services analyzed	Yes
Transit operation efficiency improved while maintaining/increasing ridership	Working towards - Conducting study and will be dependent on the results once recommendations have been implemented from the CSA
Transit Signal Priority for all new traffic signals implemented	No
Payment + boarding system for MBTA light rail + vehicles + buses improved	Yes
Green Line extension + South Coast Rail service completed	Not Applicable - Do not operate rail

Goal 2: Promote Healthy Transportation + Livable Communities	
Objective: Encourage walking, biking, + transit as active transportation	
Indicator	**Contribution**
MassDOT Bay State Bike Week facilitated + promoted annually in partnership with MassBike	Yes
All office locations have visible bicycle parking locations for visitors near entrances	Yes
Selection of public meeting venues prioritizes locations with transit, pedestrian + bicycle access	Yes
Information on transit, bicycle + pedestrian travel provided on public meeting announcements	Yes
MassDOT sidewalks + bicycle facilities are cleared of snow + ice simultaneously with vehicle lanes	Yes
Navigational signage to transit stations expanded along local roads and highways	Yes
Employees + contractors required to use transit, walk, bike or carpool to meetings whenever location + service schedules allow	No
40% of elementary + middle schools reached through Safe Routes to Schools program	Not Applicable - MassDOT responsibility
Objective: Promote eco-driving + programs to reduce reliance on single occupancy vehicles	
Indicator	**Contribution**
Eco-driving promoted through digital display boards + customer facilities	Not Applicable - GATRA does not have any digital displays which it can use for promoting commuter options
Expand commuter options programs	
Objective: Indicator	**Contribution**
Commuter options programs through digital displays promoted statewide	Not Applicable - GATRA does not have any digital displays which it can use for promoting commuter options
Parking spots at major transit stations with parking reserved for car sharing	No
Covered +/or secure bicycle parking installed at major park + ride facilities	Yes
Secure indoor bicycle parking + shower facilities provided at all major MassDOT employment centers	No

Objective: Utilize surplus land, parking lots + air rights for transit-oriented developments	
Indicator	**Contribution**
All properties, including air-rights, studied for development feasibility	No
Large parking lots at transit stations analyzed for TOD redevelopment in the Commuter Rail Master Plan	Yes
Four new RFP's issued for land development	Not Applicable - GATRA owns no land to develop this.
At least two mixed use developments on MBTA properties initiated	Not Applicable - Not the MBTA

Goal 3: Triple Bicycling, Transit + Walking Mode Share

Objective: Connect land use planning with transportation planning + investments	
Indicator	**Contribution**
Transit authorities participate in all MassDOT and MPO corridor studies	Yes
RTA's participate in MassDOT MEPA review and mitigation formation	Yes
Land use + transportation planning strategies to support mode shift incorporated into 2016 RTPs	Yes
GreenDOT Implementation Plan activities incorporated into MPO's Unified Planning Work Programs	Yes
Project evaluation criteria that prioritize mode shift, GreenDOT + GHG reduction adopted by MPOs	Yes
Complete Commuter Rail Master Plan to evaluate options to expand capacity + increase ridership along each line	Not Applicable - Do not operate commuter rail
Priority Development Areas (PDAs) + Priority Protection Areas (PPAs) approved by HED established in all MPOs	Working towards - Some but not all
Strategic regional visions for 'zero' SOV growth + GHG reduction adopted by MPOs	Yes
State-of-the-practice metric for measuring bicycle and pedestrian quality of roadways utilized in corridor planning + design	Working towards - The Regional Planning Agency, SRPEDD, does this where applicable for GATRA's facilities.
Objective: Stabilize travel demand growth on roadways from single occupancy vehicles	
Indicator	**Contribution**
All rail stations are accessed by Complete Streets	Yes

Objective: Collect data regarding factors influencing mode choices + utilize better planning tools	
Indicator	**Contribution**
Person Miles Travelled (PMT) for all modes measured and/or estimated annually at state and regional levels	Yes
Public health impacts of major transportation projects considered in project selection criteria	No
New methods for collecting travel data for bicycles and pedestrians piloted	Yes
Scenario planning methods utilized by MassDOT and MPOs instead of traditional growth trend forecasts	Working towards - SRPEDD is responsible for looking at growth trend forecasting related projects.
Traffic model assumptions for road design revised to assume limited traffic growth rather than historic VMT growth trends	Yes
MassDOT conducts travel demand forecasts with an activity based model	Not Applicable - This is a MassDOT responsibility, not RTA
Objective: Increase training opportunities on GreenDOT and Mode Shift	
Indicator	**Contribution**
Coordinated information gateway for shuttles and inter-city bus travel implemented	Yes
Programs for healthy transportation education and travel training for young + elderly travelers developed statewide	Yes
Bay State Roads technical assistance offers materials on sustainability, mode shift, Complete Streets, and parking policies	Not Applicable - Not Bay State Roads

6.26 Waste

Waste goals aim to reduce the exposure to hazardous waste and minimize the disposal of waste. There are 33 indicators for waste but only 27 (82%) are applicable to GATRA. GATRA is meeting 5 (19%), working towards 13 (48%) and not meeting 9 (33%) of the applicable waste indicators as seen in Figure 48. Figure 49 outlines the waste indicators by implementation time and level of achievement. There are 6 indicators in the waste theme which are not applicable to GATRA. For the applicable indicators 15 are short term indicators, 9 are medium-range and 3 are long-range. Of those that are applicable to GATRA they have met 2 (13%) of the immediate implementation (2013) indicators, are working towards or meeting 8 (89%) of the medium-range indicators and 3 (100%) of the long-range indicators.

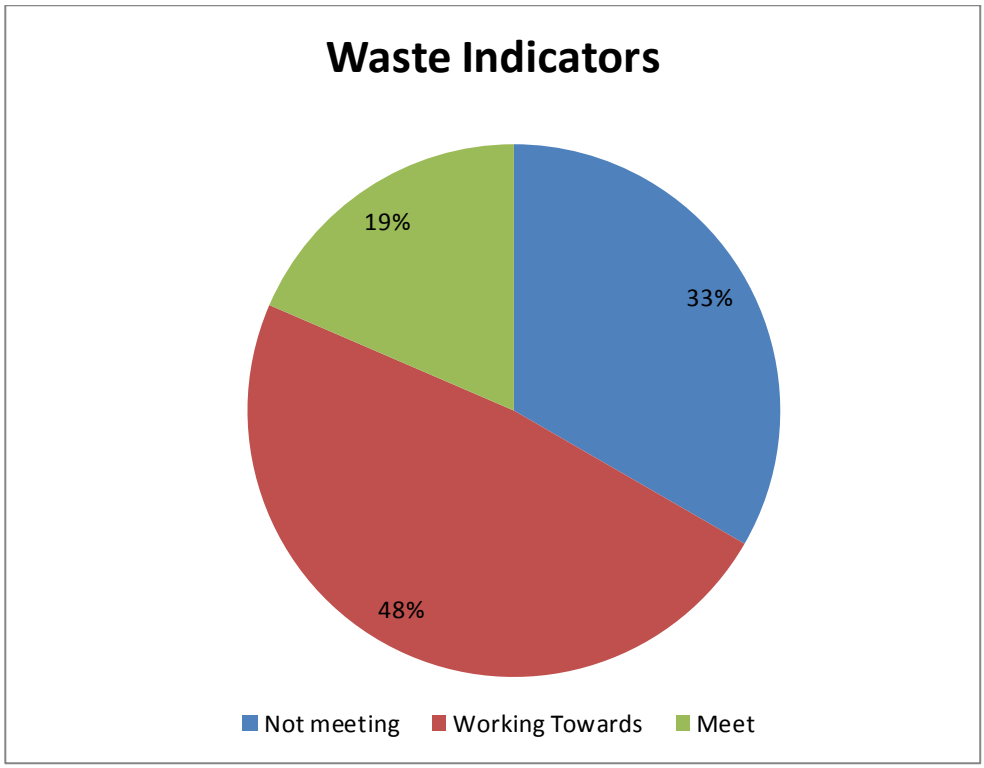

Figure 48. Waste Indicators Level of Attainment

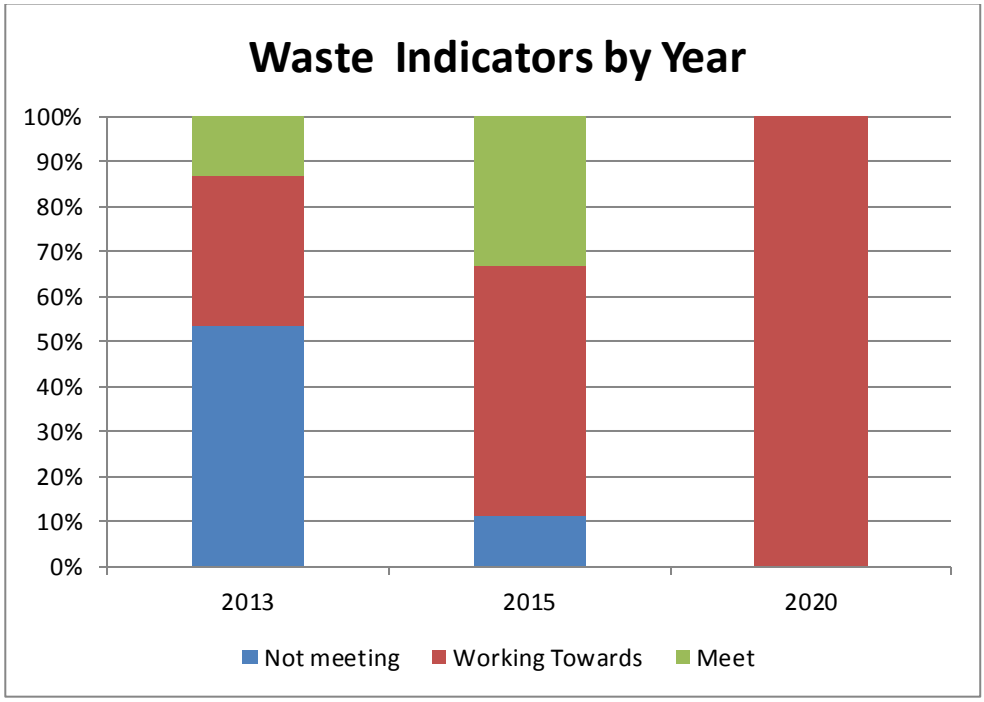

Figure 49. Waste Indicators Attainment by Year

Table 15. Waste Goal Achievement

Goal 1: Achieve Zero Solid Waste Disposal	
Objective: Increase the diversion rate of office waste	
Indicator	**Contribution**
Zero waste plan developed for MassDOT	No
Full "single stream" recycling provided at all buildings	Working towards
All electronics, cartridges, batteries, + accessories recycled	Yes
Employee education program on recycling + waste reduction underway	No
15% reduction in solid waste from offices achieved	Working towards - Some but not 15%
Office building composting or biomass heating piloted at two facilities	No
Waste reduction / recycling program emphasized in all janitorial service contracts	No
30% reduction in solid waste disposal achieved	Working towards
Objective: Eliminate litter accumulation in ROWs + stations	
Indicator	**Contribution**
Litter control programs initiated in all corridors	No
Litter prevention information provided at all rest areas + stations	Yes
Objective: Provide "full-stream" recycling opportunities at all customer facilities	
Indicator	**Contribution**
Container + paper recycling installed at all rest area, airports, transit stations + RMV branches	Working towards
Mobile electronics + license plate recycling drop off provided at key locations	No
Objective: Decrease amount of waste generation during construction + maintenance	
Indicator	**Contribution**
Waste management plans developed for all construction projects	No
At least 65% of construction debris is reused or recycled	Working towards - Some but not 65%
At least 80% of construction debris is reused or recycled	Working towards - Some but not 80%
At least 90% of landscaping waste material is reused or composted	Working towards - Some but not 90%
Objective: Decrease paper use	
Indicator	**Contribution**
Paperless office procedures and equipment piloted in all offices	No
Paper use is cut in half	Working towards - It has been cut but not by half
A paper-free office program adopted + implemented	No
Other paper products consumption (paper towels, napkins, etc.) reduced in all facilities	Yes

Goal 2: Reduce all Exposure to Hazardous Waste	
Objective: Implement Environmental Management System	
Indicator	**Contribution**
EMS systems adopted + implemented for all divisions	No
All waste is managed in compliance with a hazardous waste management plan	No
Metrics of recycling + disposals reported from all sites	No
EMS data from all Divisions compiled annually into a central performance management system	No
Best management practices for salt and sand storage in place at all depot facilities	Not Applicable - GATRA does not have sand and salt storage facilities at any of its locations.
Objective: Comply with waste ban + eliminate on-site storage	
Indicator	**Contribution**
100% compliance with state waste bans met at office + maintenance facilities	Working towards - Not quite 100%
Long-term storage of hazardous waste minimized	Yes
Objective: Increase recycling rate of hazardous materials	
Objective: Indicator	**Contribution**
Refrigerants with high global warming potential from HVAC + refrigerators recycled	Yes
80% of all hazardous waste generated is recycled where possible	Working towards - Some but not 80%
100% of hazardous waste with recycling potential is diverted	Working towards - Some but not 80%
Objective: Evaluate + remediate brownfield sites	
Indicator	**Contribution**
An assessment of all brownfield properties is completed	Not Applicable - No brownfield
Remediation / redevelopment of at least four properties underway	Not Applicable - no unused properties
Remediation / redevelopment at all known brownfield sites initiated	Not Applicable - No brownfield

6.27 Water

Water goals look to use less water and improve water systems. There are 46 indicators for water but only 28 (61%) are applicable to GATRA. GATRA is meeting 13 (46%), working towards 3 (11%) and not meeting 12 (43%) of the applicable water indicators as seen in Figure 50. Figure 51 outlines the water indicators by implementation time and level of achievement. There are 18 indicators in the water theme which are not applicable to GATRA. For the applicable indicators 14 are short term indicators, 10 are medium-term, and 4 long-range. Of those that are applicable to GATRA they have met 9 (64%) of the

immediate implementation (2013) indicators, and are working towards or meeting 5 (50%) of the medium-term (2015) indicators and 1 (25%) of the long-range indicators.

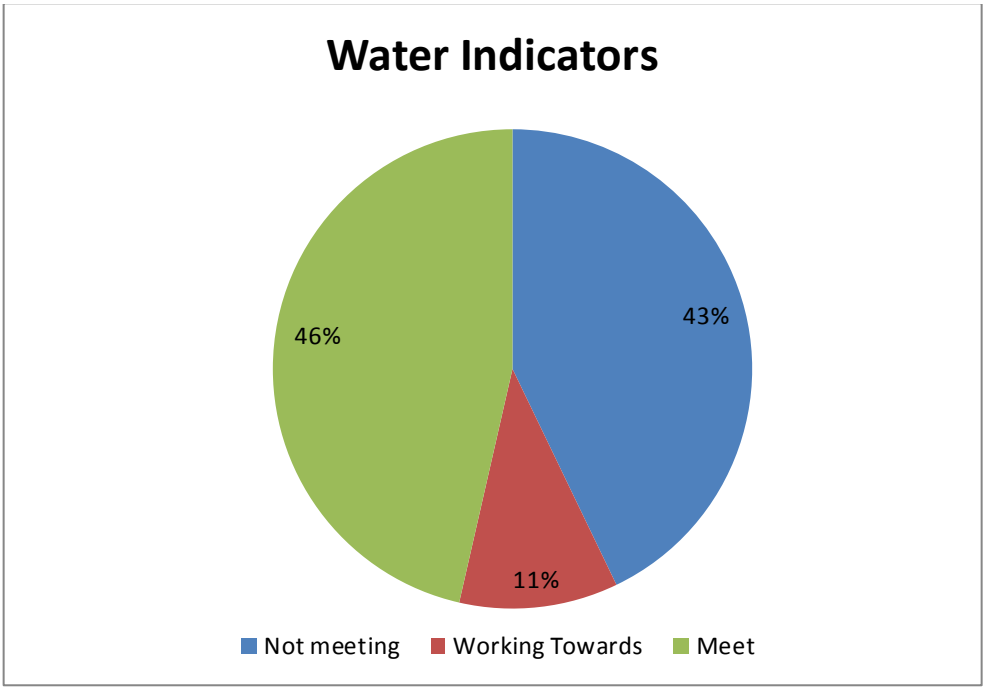

Figure 50. Water Indicators Level of Attainment

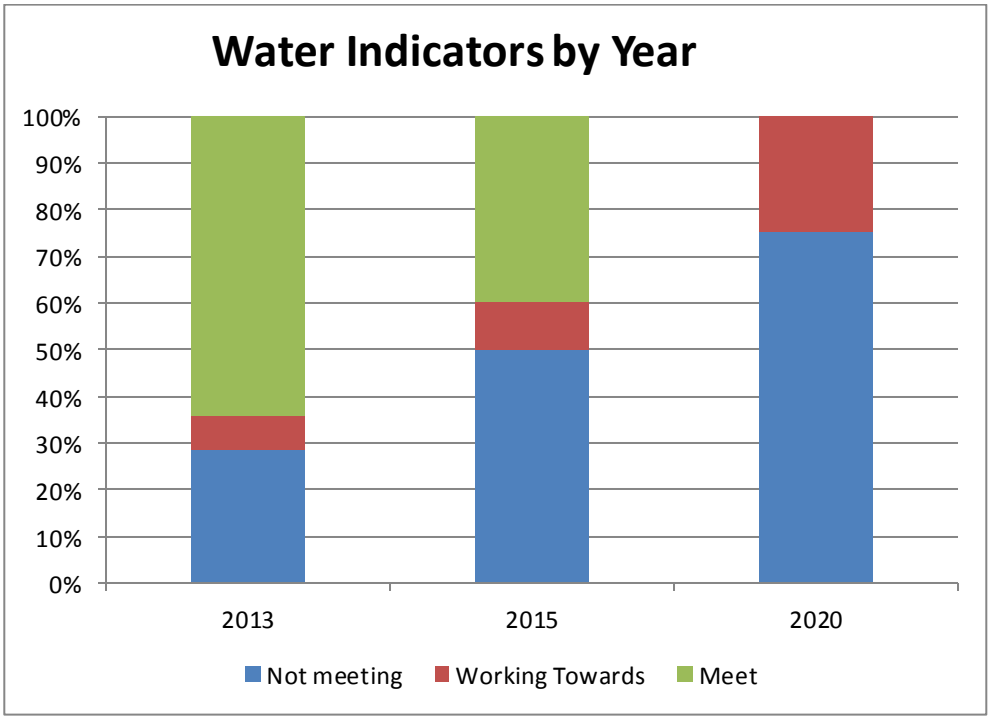

Figure 51. Water Indicators Attainment by Year

Table 16. Water Goal Achievement

Goal 1: Use Less Water	
Objective: Decrease potable water use in buildings	
Indicator	**Contribution**
The efficiency of all water fixtures in buildings evaluated	Working towards - Some but not all
Fixtures retrofitted to gain a 10% reduction in water use	Yes
Plumbing system retrofitted to gain 20% reduction in water use	Working towards
Objective: Decrease water use for irrigation	
Indicator	**Contribution**
Water conservation integrated into vegetation management plans	Yes
Potable water use for irrigation reduced by 25%	Working towards
Objective: Increase utilization of recycled water + rainwater	
Indicator	**Contribution**
Water conservation practices at bus, vehicle, or airplane washing facilities required	Yes
All new vehicle/bus/rail vehicle washing facilities designed and built with recycled water technologies	Not Applicable - No new facility
All existing vehicle washing facilities evaluated for recycled or recaptured rain water alternatives	Yes
Study of rooftop rainwater use for toilets / HVAC of largest office facilities completed	No
Rain barrels or other means to reuse rainwater + disconnect drain spouts from sewage systems installed	No
Objective: Install innovative dual plumbing water systems in facilities	
Indicator	**Contribution**
Water use innovations required in all new building proposals	Yes
Three new pilot structures or building retrofits utilizing dual plumbing completed	No

Goal 2: Improve Ecological Function of Water Systems	
Objective: Minimize impacts + enhance wetlands + impaired waters	
Indicator	**Contribution**
Preservation + enhancement of wetlands is adopted in design instead of replacement	Yes
Environmental benefits of impact mitigation through watershed planning improved	No
Natural buffers between wetland resources + transportation infrastructure increased whenever possible	Yes
Alternative deicer agents utilized in areas with wetlands, coldwater fisheries, and water supplies	Not Applicable - GATRA's properties are not located near any wetlands, coldwater fisheries or water supplies
Five wetland restoration projects not considered mitigation completed	No

Objective: Adapt facilities for climate change resilience	
Indicator	**Contribution**
Climate change adaptation strategies initiated between local and federal parties	No
Revised extreme precipitation data utilized for rainfall, flood flow + stormwater calculations	No
Climate Adaptation Plan applicable to all MassDOT facilities adopted	No
Statewide climate change vulnerability assessment for MassDOT facilities completed	Not Applicable - Not MassDOT facility
Critical roadway or rail segments targeted for culvert replacement + rearming for scour protection	Not Applicable - Limited roadway
Fish passage structures which meet state crossing standards included in maintenance activities	Not Applicable - no open waters
All reconstruction projects crossing tidal habitats include measures to eliminate tidal flow restrictions	Not Applicable - not near tidal waters
Objective: Minimize impacts of ROWs + bridges on fluvial processes	
Objective: Indicator	**Contribution**
New roadways + bridges designed to maximize natural fluvial processes including tidal flushing	Not Applicable - no new paved areas
At minimum 12 bridge replacement projects improving water flow under construction or completed	Not Applicable - no open waters
All railroad bed reconstruction projects retrofitted with enhanced stream crossing standards	Not Applicable - Do not operate rail
The standards within MA Stream Crossing Handbook utilized in all project development processes	Yes
A minimum of five culverts redesigned + rebuilt for improved fish migration	Not Applicable - no culverts
All projects crossing tidal habitats evaluated for restriction of tidal flow	Not Applicable - not near tidal water
Objective: Reduce stormwater volumes + increase permeable surface areas	
Indicator	**Contribution**
Environmentally sensitive site design in new construction projects utilized	Yes
Post peak discharge rates held to less than pre-project discharge rates to the maximum extent possible	Yes
All projects designed to remove solids + pollutants to the maximum extent possible	Yes
All projects designed to include measures to increase infiltration + reduce stormwater volumes	Yes
Permeable paving or other infiltration installations included in parking lot resurfacing projects	No
Design charette conducted for creating "green roof" bus shelters for the MBTA and/or major RTA	No
Green roof installed on at least one large bus or rail maintenance garage	No

Objective: Decrease non-point source pollutant discharges	
Indicator	**Contribution**
All structural best management practices inspected annually + cleaned as necessary	Yes
Illicit discharges from MassDOT structures eliminated upon detection	Not Applicable - not MassDOT facility
Long-term pollution prevention programs implemented at all maintenance sites	Yes
Environmentally sensitive design / Low Impact Design (LID) utilized in all construction projects	Yes
New best management practices installed at all facilities identified by Impaired Waters Program	Not Applicable - GATRA properties are not located near impaired Waters Program at this time
Phytotechnology as part of stormwater evaluation + constructed stormwater controls utilized	No
Assessment protocol developed to evaluate water quality functions of roadside vegetation	No
Stormwater 'Low Impact Design' integrated into revised Project Development + Design Guide	Not Applicable - MassDOT responsibility
Commuter ferries follow best practices for fuel handling, bilge water, sanitary waste + trash disposal	Not Applicable - Do not operate ferries

6.2 Conclusion

With over 300 indicators, as identified in the GreenDOT policy 68% are applicable to GATRA; overall GATRA is meeting 40% of the applicable indicators. They are working continuosly to achieve the indicators and have achieved many indicators ahead of schedule. Some of the indicators which are applicable are joint responsibilities of MRTA and either MassDOT, the planning commission or the town and they must work collaboratively to achieve success. Additionally many of the indicators just do not apply because they are specific to the MBTA; rail; require there has been or will be new construction; they are for MassDOT owned facilities, or they are for environmentally sensitive land areas.

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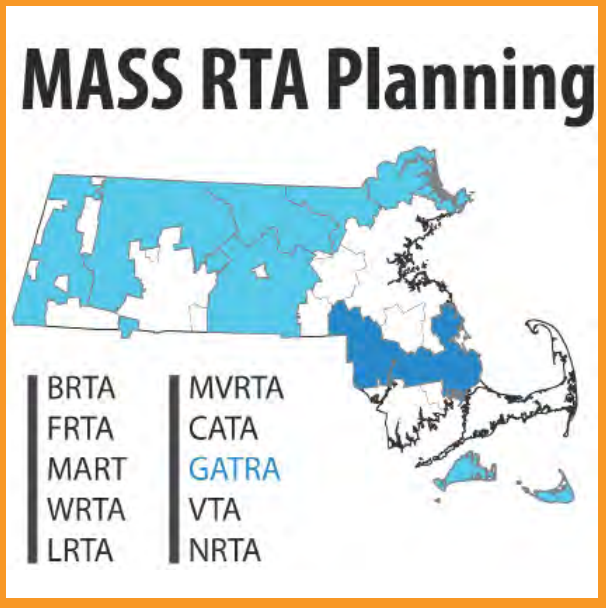

Chapter 7

AECOM / URS
TMD
Burke & Company

GATRA
Greater Attleboro Taunton
Regional Transit Authority

7. RECOMMENDATIONS

7.1 Introduction

Recommendations were developed using a cumulative process that incorporated public outreach, a diverse steering committee, operational input from GATRA, and analysis of existing transit service as well as GATRA's local and regional market. Strategies to improve the system were developed based on the goals and objectives outlined at the beginning of the plan. The recommendations are intended to better align service with local and regional demand using a three phase process that will serve to strengthen the GATRA system and attract more riders. A phased approach was used in order to establish the immediacy and prioritization of needs and was based on an incremental approach and available resources.

- Phase 1 – implement immediately
- Phase 2 - implement as resources and funding are available
- Phase 3 - implement as resources and funding are available

To be able to evaluate whether or not transit services are meeting system goals and objectives, an effective monitoring program should first be in place. A service monitoring program is important both in terms of gauging whether the goals of the community are being accomplished with the service and that the service is both effective and efficient. Without specific measures, success is difficult to measure from year to year. Service monitoring should be part of the daily operation based on specific data collection procedures. Data collection is essential to evaluating the service performance and to determining if changes should be made in the service delivery. To assist in developing a service monitoring program, recommended service guidelines and performance measures have been developed.

7.2 Strategies for Service Recommendation

For transportation planning purposes, a goal is defined as a purpose or need that should be attained to address a transportation issue. An objective is a specific, measurable method or activity that is designed to achieve the identified goal. The goals and objectives were developed at the onset of the planning process with GATRA and have guided the development of the plan throughout.

Goal #1: Better Align Service with Needs

Objective 1.a: Promote services through marketing efforts in order to increase awareness of options for transit-dependent populations.

Objective 1.b: Improve existing service frequency and service options and/or implement new service to meet the demands of present and potential users which will make bus use an attractive transportation alternative.

Objective 1.c: Work with the community to identify transit-dependent populations in need of public transit service options.

Goal #2: Increase Ridership and Fare Revenues

Objective 2.a: Increase transit frequency and service options to make bus use an attractive transportation alternative.
Objective 2.b: Provide rider-friendly and accessible marketing material.
Objective 2.c: Use technology to make bus use more convenient.

Goal #3: Advocate for More Funding from the Legislature

Objective 3.a: Leverage maximum funding from federal, state, and other sources.
Objective 3.b: Obtain operational funding from the state legislature.
Objective 3.c: Identify and pursue new funding sources.

Goal #4: Maintain a Strong Financial Plan

Objective 4.a: Educate tourists about the bus system before they arrive.
Objective 4.b: Increase transit frequency and service options to make bus use an attractive transportation alternative.
Objective 4.c: Provide rider-friendly and accessible marketing material.

Goal #5: Improve Efficiency and Cost-Effectiveness of System

Objective 5.a: Review the system usage and identify over- and under-served locations within the region.
Objective 5.b: Work with the community to identify transit needs.
Objective 5.c: Wherever appropriate adjust service options and frequencies to match with the identified needs.

Aside from the goals and objectives, several other strategies/guiding principle, were used in designing recommendations:

1. **Simplify** – Routes should be designed along main corridors with minimal schedule deviations. For routes that are not linear, service should be provided in both directions.
2. **Service should match demand** – The denser (both in terms of employment and population) areas should have a higher level of service with either higher frequency routes or multiple lower frequency routes. Major corridors often warrant higher frequencies.

3. **Priority to existing ridership** – Service should be increased in areas that warrant it over servicing new areas if limited resources are available.
4. **Connections –** No route should be designed in isolation. If possible it should connect to at least one hub. Where connections to hubs are not possible the route should connect with at least one other route to facilitate transfers.
5. **Efficiency** – Where possible routes should be designed to be the most efficient. Decisions to deviate off the main corridor and add time to the route are only warranted where key destinations like shopping centers are too far off the main road, there are a lack of pedestrian facilities or the benefit (due to demand) of servicing the deviation outweighs the additional time incurred to others on the route.
6. **Regional network** – Regional connections should be improved to provide access outside of the GATRA service area through transfers with other RTAs or the MBTA, to areas identified as common destinations through the market analysis and public outreach process.

7.3 Recommendations Overview

Recommendations are categorized by route and phase. A three phase process was used in order prioritize recommendations. Priority was based on demand, route performance, public feedback and resource availability. Phase 1 assumes no additional cost to the annual operating budget of GATRA and is achieved through eliminating underperforming routes and improving efficiencies with existing routes through service adjustments and eliminating underutilized portions of routes. Phase 2 assumes an annual increase of $1 million in operating funds, but also benefits from the unallocated savings achieved in Phase 1; Phase 3 assumes an unconstrained operating budget in which the cost of providing the full need of service will be offset through increased revenues from local, state, and federal funding partners.

Phase 1 consists primarily of service eliminations and consolidations, but uses the savings to offset costs associated with expanding service on the Attleboro Route 24 and the Middleboro Downtown Shuttle. Several recommendations bear no cost to GATRA because the changes in routing do not increase number of hours the service is in operation. Many of the Phase 1 recommendations affect routes in the Taunton/Attleboro service areas. Phase 2 consists of two entirely new routes: Route 2 serving MA-138 in Taunton and the Raynham Council on Aging; Plainridge is a new route originating at the Triboro Plaza in Attleboro and serving the new Plainridge Park Casino; The Taunton Route 9 is also lengthened to better serve US-44 in Taunton. Phase 3 consists of expanded night service on most routes and the introduction of Sunday service on all routes; also included is a new route in Bellingham which expands upon the existing commuter service to provide a community shuttle throughout the day; routes in Wareham and Plymouth are expanded during July and August to accommodate seasonal demands.

Phase 1:

- Modify routes to improve efficiency and service areas
- Extend routes to service new areas
- Convert some fixed routes to deviated fixed routes
- Eliminate underutilized routes and route sections

Phase 2:

- Improve frequency
- Establish new routes
- Expand service

Phase 3

- Expand North Bellingham T-Shuttle to provide all day service
- Expand summer service on Plymouth Area Link routes
- New route serving high demand areas
- Establish Sunday service on all routes
- Expand weekday service to 10 PM on selected routes.

A summary of the overall recommendations is in Table 17 and Table 18 breaks down the recommendations by phase. System maps for each phase can be found in Figure 52 - Figure 54, for detailed individual route recommendation profiles see section 7.7

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Table 17. Service Recommendations

GATRA Proposed Service Recommendations				Weekday				Saturday				Sunday	
Route	Name	Proposed Service Changes	Alignment Changes	Existing		Proposed		Existing		Proposed		Proposed	
				Frequency (min)	Span	Frequency (min)	Span	Frequency (min)	Span	Frequency (min)	Span	Frequency (min)	Span
	Mansfield/Foxborough/ Plainville	New route	A new route would be created between the Mansfield MBTA station and the Plainridge Park Casino and serve Patriot Place.	N/A	N/A	90	13 hours	N/A	N/A	90	10.5 hours	90	10.5 hours
	Medway T-Shuttle 2	None	Additional shuttle from the West Medway Fire Station to the Medway T	N/A	N/A	45	5:47 AM – 7:57 AM & 4:50 PM – 8:10 PM	N/A	N/A	N/A	N/A	N/A	N/A
FAB	Franklin Area Bus	Add Sunday service and night service	Modify route to serve the YMCA and Magnolia Heights. YMCA on select trips only	61	6:40 AM – 5:36 PM	60 (65 w/ YMCA)	6:40 AM – 9:36 PM	80	8:20 AM – 5:46 PM	60 (65 w/ YMCA)	8:20 AM – 5:46 PM	60 (65 w/ YMCA)	8:20 AM – 5:46 PM
	North Bellingham T-Shuttle	Pilot Mid-day service and add weekend service	Service Market Basket/Walmart as well as to Village Plaza in Franklin.	varies (avg 35 min)	6:10 AM – 7:35 AM & 4:28 PM – 7:06 PM	45	6:10 AM – 7:06 PM	N/A	N/A	45	8:30 AM - 6:00 PM	45	8:30 AM - 6:00 PM
Route 1	Westside	Add Sunday service and night service	Route 1 would serve Hannaford Supermarket rather than the closed Shaw's.	60	6:00 AM – 6:37 PM	60	6:00 AM – 10:37 PM	60	9:00 AM - 5:37 PM	60	9:00 AM - 5:37 PM	60	9:00 AM - 5:37 PM
Route 2	Taunton/Raynham	New route	Create a new route to service Raynham Council on Aging via rt 138 Walmart and Market Basket.	N/A	N/A	60	7:00 AM – 10:50 PM	N/A	N/A	60	9:30 AM - 6:20 PM	60	9:30 AM - 6:20 PM
Route 6	Whittendon	Add Sunday service and night service	Extend route to serve Perkins with a deviation.	60	6:35 AM – 6:33 PM	60	6:35 AM – 10:33 PM	60	9:00 AM - 4:52 PM	60	9:00 AM - 4:52 PM	60	9:00 AM - 4:52 PM
Route 7	School Street/Raynham	Add Sunday service and night service	Service to Pine Hill Estates would be eliminated and add new service to Cape Roads Plaza.	60	7:00 AM – 6:50 PM	60	7:00 AM – 10:50 PM	60	9:30 AM - 6:20 PM	60	9:30 AM - 6:20 PM	60	9:30 AM - 6:20 PM
Route 8	East Taunton/Raynham/ Wal-Mart	Add Sunday service and night service	Add a deviation to serve Pine Hills via deviation	60	5:45 AM – 7:45 PM	60	5:45 AM – 11:45 PM	60	9:00 AM - 6:45 PM	60	9:00 AM - 6:45 PM	60	9:00 AM - 6:45 PM
Route 9	Weir/ Route 138	Add Sunday service and night service	Extend route to serve Highland Street, Hannaford Supermarket and return to the GATRA terminal via Route 44.	60	6:40 AM – 5:58 PM	60	6:40 AM – 5:58 PM	60	9:40 AM - 4:48 PM	60	9:40 AM - 4:48 PM	60	9:40 AM - 4:58 PM
Route 18	Taunton/Norton/Attleboro	Add Sunday service and night service	Realign the route to serve Sensata Technologies	varies	5:00 AM – 7:56 PM	varies	5:00 AM – 11:56 PM	varies	7:45 AM - 6:41 PM	varies	7:45 AM - 6:41 PM	varies	7:45 AM - 6:41 PM
Route 24	Attleboro/Pawtucket, RI	Add Sunday service and night service	Route 24 would be rerouted to service County Street to US-1A, Bristol Place, and terminate at the Mayfair Plaza.	60	5:30 AM – 6:53 PM	60	5:30 AM – 10:53 PM	N/A	N/A	60	8:30 AM - 6:00 PM	60	8:30 AM - 6:00 PM
Route 140	Route 140/Wheaton T-Shuttle	Add a deviation to Serve the Cabot Industrial Park	Add a deviation to Serve the Cabot Industrial Park	60	6:15 AM – 11:38 PM	60	6:15 AM – 11:38 PM	60	8:30 AM - 12:19 AM	60	8:30 AM - 12:19 AM	60	8:30 AM - 12:19 AM
Plainridge	Plainridge	New route	Create a new route to serve the Plainridge Park Casino and Plainville Crossing	N/A	N/A	60	5:50 AM – 11:00 PM	N/A	N/A	60	9:10 AM - 5:00 PM	60	9:10 AM - 5:00 PM
Middleborough	Downtown Middleborough Shuttle	None	Extend route to serve Compass Medical and reroute to better serve Massasoit Community College	60	8:00 AM – 5:00 PM	75	8:00 AM – 5:00 PM	N/A	N/A	N/A	N/A	N/A	N/A

GATRA Proposed Service Recommendations

Route	Name	Proposed Service Changes	Alignment Changes	Weekday				Saturday				Sunday	
				Existing		Proposed		Existing		Proposed		Proposed	
				Frequency (Min)	Span	Frequency (Min)	Span	Frequency (Min)	Span	Frequency (Min)	Span	Frequency (Min)	Span
Link 1	Link 1 Wareham/Onset/ Wareham	Add Sunday service and night service. Increase summer service	Realign Wareham Link 1 to originate in Wareham Town Center	60	7:55 AM – 5:45 PM	60 (30 during summer peak)	7:55 AM – 9:45 PM	60	8:55 AM – 5:30 PM	60	8:55 AM – 5:30 PM 7:55 AM - 9:45 PM (summer)	60	8:55 AM – 5:30 PM 8:00 AM - 8:00 PM (Summer)
Link 2	Link 2 Cranberry Plaza to Buzzards Bay	Add Sunday service and night service. Increase summer service	Realign Wareham Link 2 to originate in Wareham Town Center	60	7:55 AM – 5:30 PM	60 (30 during summer peak)	7:55 AM – 9:30 PM	120	8:55 AM – 5:30 PM	120 (60 summer)	8:55 AM – 5:30 PM	120 (60 summer)	8:55 AM – 5:30 PM
Link 3	Link 3 Shangri-La to Cranberry Plaza	Increase service hours, add more summer service	Realign Wareham Link 3 to originate in Wareham Town Center	60	11:05 AM – 2:30 PM	60	9:05 AM - 4:30 PM	N/A	N/A	60	5.25 hrs (summer only)	60	12 hr (summer only)
Link 4	Link 4 Cranberry Plaza to West Wareham	Add Sunday service and night service. Increase summer service	Realign Wareham Link 4 to originate in Wareham Town Center	60	7:15 AM – 5:45 PM	60 (30 during summer peak)	7:15 AM – 9:45 PM	60	9:30 AM – 4:15 PM	120 (60 summer)	9:30 AM – 4:15 PM	120 (60 summer)	9:30 AM – 4:15 PM
Manomet/ Cedarville	Manomet/Cedarville Deviate Link	Add Sunday service and night service	Extend the route north to operate a portion of the Mayflower Link.	60	7:30 AM – 5:20 PM	90	7:30 AM – 9:20 PM	60	10:00 AM – 5:20 PM	90	10:00 AM – 5:20 PM	90	10:00 AM – 5:20 PM
Mayflower Link	Mayflower Link	Add Sunday service and night service	Shorten route and terminate at Plimouth Plantation.	60	7:00 AM – 5:50 PM	60	7:00 AM – 9:50 PM	60	10:00 AM – 5:50 PM	60	10:00 AM – 5:50 PM	60	10:00 AM – 5:50 PM
Scituate Shuttle	Scituate Shuttle	New route	A new in-town shuttle would be created within Scituate.	N/A	N/A	30	6:00 AM - 6:00 PM (8:30 PM summer)	N/A	N/A	30	6:00 AM - 7:00 PM	30	6:00 AM - 7:00 PM
Hanover/ Pembroke	Hanover Mall/Pembroke	New route	Create a new route to serve the Town of Hanover	N/A	N/A	90	6:00 AM - 6:00PM	N/A	N/A	90	8:30 AM – 6:00 PM	90	8:30 AM - 6:00 PM
SAIL South	Marshfield/Kingston/Duxbury	Add Sunday service and night service	Split the SAIL Route into two shorter routes. This part is from the Marshfield senior center to Independence Mall	60	6:00 AM – 7:10 PM	60	6:00 AM – 11:10 PM	60	8:30 AM – 6:50 PM	60	8:30 AM – 6:50 PM	92 Minutes	8:30 AM – 6:50 PM
SAIL North	Marshfield/Kingston/Duxbury	Add Sunday service and night service	Split the SAIL Route into two shorter routes. This part is from the Marshfield senior center to Stop and Shop	60	6:00 AM – 7:10 PM	60	6:00 AM – 11:10 PM	60	8:30 AM – 6:50 PM	60	8:30 AM – 6:50 PM	81 Minutes	8:30 AM – 6:50 PM
Freedom	Freedom Link	Sunday and late night service. Improved summer service	No changes	60	6:20 AM – 5:20 PM	60 (30 during summer peak)	6:20 AM – 9:20 PM	60	10:00 AM - 5:20 PM	60/30 during summer peak	10:00 AM - 5:20 PM	60 (30 during summer peak)	10:00 AM - 5:20 PM
Liberty	Liberty Link	Sunday and late night service. Improved summer service	No changes	60	6:25 AM – 6:25 PM	60 (30 during summer peak)	6:25 AM – 10:25 PM	60	8:25 AM -6:25 PM	60/30 during summer peak	8:25 AM - 6:25 PM	60 (30 during summer peak)	8:25 AM - 6:25 PM
Route 3	Silver City	Eliminate route	Eliminate route, duplicative and low performing	60	6:00 AM - 8:30 AM 2:30 PM - 6:10 PM	Eliminated		N/A	N/A	N/A	N/A	N/A	N/A
Route 10	Attleboro/ North Attleboro	Add Sunday service and night service	None	60	5:30 AM - 6:50 PM	60	5:30 AM - 10:50 PM	60	9:30 AM - 5:00 PM	60	9:30 AM - 5:00 PM	60	9:30 AM - 5:00 PM
Route 11	South Attleboro Connector	Add Sunday service and night service	None	60	5:40 AM - 7:20 PM	60	5:40 AM - 11:20 PM	60	9:10 AM - 4:52 PM	60	9:10 AM - 4:52 PM	60	9:10 AM - 4:52 PM
Route 12	Attleboro/ So. Attleboro/ No. Attleboro	Add Sunday service and night service	None	60	6:00 AM - 6:58 PM	60	6:00 AM - 10:58 PM	60	9:00 AM - 4:58 PM	60	9:00 AM - 4:58 PM	60	9:00 AM - 4:58 PM

GATRA Proposed Service Recommendations				Weekday				Saturday				Sunday	
Name	Proposed Service Changes	Alignment Changes	Existing	Proposed		Existing		Existing		Proposed		Proposed	
				Frequency (Min)	Span	Frequency (Min)	Span	Frequency (Min)	Span	Frequency (Min)	Span	Frequency (Min)	Span
Route 14	Attleboro/ No. Attleboro/Plainville	Add Sunday service and night service	None	60	5:40 AM - 6:57 PM	60	5:40 AM - 10:57 PM	60	9:00 AM -4:48 PM	60	9:00 AM -4:48 PM	60	9:00 AM - 4:48 PM
Route 15	Oak Hill	Add Sunday service and night service	None	60	10:00 AM - 5:29 PM	60	10:00 AM - 9:29 PM	60	8:35 PM - 6:04 PM	60	8:35 PM - 6:04 PM	60	8:35 PM - 6:04 PM
Route 16	Attleboro/Seekonk	Add Sunday service and night service	None	60	5:35 AM - 6:26 PM	60	5:35 AM - 10:46 PM	60	9:35 AM - 5:26 PM	60	9:35 AM - 5:26 PM	60	9:35 AM - 5:26 PM
Wareham/Lakeville	Wareham/Middleborough/Lakeville Train Connector	None	Service to Wareham center	varies	6:00 AM - 10:25 AM 2:30 PM - 7:05 PM	varies	6:00 AM - 10:25 AM 2:30 PM - 7:05 PM	N/A	N/A	N/A	N/A	N/A	N/A
Pembroke	Pembroke Shuttle	None	None	varies	6:00 AM - 7:24 AM 5:10 PM - 6:46 PM	varies	6:00 AM - 7:24 AM 5:10 PM - 6:46 PM	N/A	N/A	N/A	N/A	N/A	N/A
Medway T	Medway T-Shuttle (1)	None	None	30	5:57 AM – 7:50 AM & 5:00 PM – 8:00 PM	30	5:57 AM – 7:50 AM & 5:00 PM – 8:00 PM	N/A	N/A	N/A	N/A	N/A	N/A
	South Bellingham T-shuttle	None	None	varies	6:30 AM - 7:35 AM 4:20 PM - 6:42 PM	varies	6:30 AM - 7:35 AM 4:20 PM - 6:42 PM	N/A	N/A	N/A	N/A	N/A	N/A
Tri-Town	Tri –town connector	Add Sunday service and night service	None	varies	5:53 AM – 6:57 PM	varies	5:53 AM – 10:57 PM	varies	7:30 AM - 6:49 PM	varies	7:30 AM -6:49 PM	varies	7:30 AM - 6:49 PM

Table 18. Recommendations by Phase

Bus Route		Alignment	Schedule	Phase 1	Phase 2	Phase 3
	Mansfield/Foxborough/Plainville	A new route would be created between the Mansfield MBTA station and the Plainridge Park Casino and serve Patriot Place. The route would travel from the Mansfield MBTA station to Stop & Shop and Patriot Place via Route 140. From Patriot Place it would travel to the Plainridge Park Casino via US-1.	90 Minute Frequency			$453,000
Medway	Medway T-Shuttle	Create an additional shuttle beginning from the West Medway Fire Station Route 109 and Summer St.—east on Route 109 to the shopping center—right on Holliston Street to Medway Middle School—Village Street to Route 115 South to the Norfolk MBTA station.	3 AM and 3 PM trips		$105,000	
FAB	Franklin Area Bus	This improved route would travel from Magnolia Heights to Village Plaza, serving the YMCA on deviation. The route alignment would be Magnolia Heights—Central Park Terrace—MBTA Station to Franklin High School via Main Street to Village Plaza via Panther Way to Route 140. Serve the YMCA on deviation via West Central Street—Forge Parkway to National Drive.	Add the YMCA as a deviation with trips in AM and PM to be determined based on need and input from public.	-$24,000		
Bellingham	North Bellingham T-Shuttle	The route alignment would remain the same with the exception of adding service to Market Basket/Walmart as well as to Village Plaza in Franklin.	Add 6 trips to provide mid-day service			$355,000
Bellingham	South Bellingham T-Shuttle	No change	No change	--		
Route 1	Westside	Route 1 would serve Hannaford Supermarket rather than the closed Shaw's.	No change to schedule.	$0		
Route 2	Taunton/Raynham	Create a new route from the GATRA terminal with service on Route 138 to Walmart and Market Basket. The route would turn onto King Phillip Street to Mill Street and serve the Raynham Housing Authority. It would turn onto North Main Street (Route 104) to South Main Street to King Phillip Street and terminate at the Raynham Senior Center.	12 trips per weekday, 10 trips per Saturday			$361,000
Route 6	Whittenton	Route 6 would remain unchanged with the exception of extending the Industrial Park service to Perkins. The alignment change would be John Hancock Road to Fremont Street to Bassett Street to Bay Street.	Add Perkins as a deviation for AM/PM trips. Operate as a call ahead service.	$0		
Route 7	School Street/Raynham	Service to Pine Hill Estates would be eliminated and new service added to Cape Roads Plaza.	No change to schedule.	$0		
Route 8	East Taunton/Raynham/Wal-Mart	Route 8 would remain unchanged with the exception of adding deviation or call ahead service to Pine Hill Estates in Raynham.	No change to schedule.	$0		
Route 9	Weir/ Route 138	Route 9 would be extended and serve Highland Street, Hannaford Supermarket and return to the GATRA terminal via Route 44.	11 Trips per weekday, 8 trips per Saturday		$189,000	
Route 10	Attleboro/ North Attleboro	No change	No change	--		
Route 11	South Attleboro Connector	No change	No change	--		
Route 12	Attleboro/ So. Attleboro/ No. Attleboro	No change	No change	--		

Bus Route		Alignment	Schedule	Phase 1	Phase 2	Phase 3
Route 14	Attleboro/ No. Attleboro/Plainville	No change	No change	--		
Route 15	oak Hill	No change	No change	--		
Route 16	Attleboro Seekonk	No change	No change	--		
Route 18	Taunton/Norton/Attleboro	Route 18 will maintain its current route from Taunton to Attleboro via Norton with a minor route alignment change in Attleboro to serve Sensata Technologies. The route alignment change would be Pleasant St. to East Access Road to Perry Ave. to Field Street.	No change to schedule.	$0		
Route 24	Attleboro/Pawtucket, RI	Route 24 would have a complete route alignment change. Route 24 would reroute service onto County Street to US-1A, serve Bristol Place and terminate at the Mayfair Plaza.	13 trips per day	$129,000		
Route 140	Route 140/Wheaton T-Shuttle	Route 140/Wheaton Shuttle would remain unchanged with the exception of adding deviation service to the Cabot Business Park. From Mansfield MBTA to Forbes Blvd. via Chauncy Street (Route 106). Deviation would travel from Forbes Blvd. to Hampshire Road to West Street to Walnut Street returning back onto Chauncey Street (Route 106).	Add 4 AM/PM deviations to Cabot Industrial Park	$0		
Plainridge	Plainridge	Create a new route to serve the Plainridge Park Casino. The route would travel from the Triboro Plaza to Plainridge via Route 152. The North Attleborough High School as well as Bishop Feehan High School would be served as a deviation.	13 trips per day		$339,000	
Middleborough	Downtown Middleborough Shuttle	This shuttle will largely remain the same with the exception of better service to Massasoit Community College as well as new service to Compass Medical. The new alignment to serve Massasoit would be Wareham St.—South Main St.—Nickerson Ave.—Union to Center Street and continue regular route. The new alignment to Compass Medical would be via Route 28 and Route 18.	7 trips per weekday	$46,000		
Link 1	Link 1 Wareham/Onset/Wareham	Link 1 would travel from the MBTA station to Cromesett and Swifts Beach via Marion Rd. and Swifts Beach Rd. It would then travel to Onset Village via Minot Ave. and Onset Ave., serve Cranberry Plaza via Main Ave. and return to the MBTA station via Depot St. and Minot Ave.	No change to schedule.	$0		
Link 2	Link 2 Cranberry Plaza to Buzzards Bay	Link 2 would travel from the MBTA station to Cranberry Plaza via Minot Ave. and Depot St. From Cranberry Plaza it would travel into Bourne to the Park and Ride lot via Cranberry Highway—Main St.—Route 28. From Bourne it would return to the MBTA station via Main St.—Onset Ave.—Minot Ave.	No change to schedule.	$0		
Link 3	Link 3 Shangri-La to Cranberry Plaza	Link 3 would travel from the MBTA station to Tedeschi's via Main St.—Cranberry Highway—Glen Charlie Rd. to Tedeschi's and return via the same route.	No change to schedule.	$0		
Link 4	Link 4 Cranberry Plaza to West Wareham	Link 4 would travel via Route 28 directly to the MBTA station	No change to schedule.	$0		
WL	Wareham/Lakeville connector	No change	No change	--		

Bus Route		Alignment	Schedule	Phase 1	Phase 2	Phase 3
Wareham Link	Summer Schedule	Additional service on all Onset Wareham Link routes.			$106,000	
Manomet/ Cedarville	Manomet/Cedarville Deviate Link	A new deviated route would be created that encompasses the Manomet/Cedarville Link and a portion of the Mayflower Link. This route would travel from Bruno's Corner in Cedarville to White Horse Beach and Plimouth Plantation via Route 3A.	6 Weekday trips, 4 Saturday trips	-$144,000		
Mayflower Link	Mayflower Link	This route would be redeveloped and travel from Plymouth Center to Plimoth Plantation via Route 3A and Sandwich Street. From Plimoth Plantation it would travel to Shops at Five via Obery Street and Long Pond Road.	10 Weekday trips, 7 Saturday trips			$22,000
Pembroke	Pembroke Shuttle	No change	No change	--		
Freedom/Liberty		No change	4 additional Weekday Trips, 4 Additional Saturday Trips, 15 Additional Sunday Trips Additional service on the Freedom/Liberty between July 1 and August 31 to accommodate seasonal demand.			$38,000
Scituate Shuttle		The shuttle would travel from the Town Hall/Police Station-First Parish Rd.-Gates Intermediate School-Central Park Senior Housing-First Parish Rd.-Common St. to Wheeler Park Senior Center-Stockbridge Rd.-Brook St. to Harbor Walk/Town Marina-Kent St. to Kent Village Apartments-New Kent St.-Country Way and return to Scituate Town Hall/Police Station.	10 Weekday trips, 7 Saturday trips			$162,000
Scituate Shuttle	Scituate Shuttle	Summer Schedule between July 1 and August 31	4 additional Weekday Trips, 4 Additional Saturday Trips, 15 Additional Sunday Trips			$89,000
Hanover/Pembroke	Hanover Mall/Pembroke	Make permanent a pilot shuttle between Pembroke Housing at Mayflower Court and the Hanover Mall. The route would travel via Route 27 to Center St. (Route 36) to the Pembroke Community Center Parking Lot –Center St. / Barker Street (Route 14)-Route 53 Washington St. to Pleasant St.-Oak St. to Route 139-Route 53 Columbia Rd. to Broadway-Spring St.-Hanover St.-back to Route 53 to the Hanover Mall. The regular service shuttle would include the additional costs associated with providing ADA paratransit service.	8-9, 5-6 Saturday trips			$285,000
SAIL South	Marshfield/Kingston/Duxbury	The majority of this proposed Kingston/Duxbury route would maintain the routing of the Marshfield/Duxbury/Kingston Route. Beginning at the Independence Mall it would travel to the Marshfield Senior Center via Route 3A and Route 139. The alignment change begins at the Senior Center. From the Senior Center it would travel to Webster Square via Webster Street.	8 Weekday trips, 7 Saturday trips	$0		
SAIL North	Marshfield/Kingston/Duxbury	The majority of this proposed Marshfield route would maintain the routing of the Marshfield/Duxbury/Kingston Route. Beginning at Stop & Shop it would travel via Route 139 to Brant Rock/Post Office. From Brant Rock it travels to the Senior Center. The alignment change begins at the Senior Center. From the Senior Center it would travel to Webster Square via Webster Street.	8 Weekday trips, 7 Saturday trips	$0		
Route 3	Eliminate	Eliminate the Route 3 due to low ridership	N/A	-$123,000		
All Routes	Sunday Service	Add Sunday service to all current routes				$1,368,000

Bus Route	Proposed Changes	Alignment	Schedule	Phase 1	Phase 2	Phase 3
New Routes	Sunday Service	Add Sunday service to all proposed routes				$332,000
New Routes	Night Service	Extend service to 10 PM on all proposed routes				$245,000
Taunton/Attleboro	Night Service	Extend service to 10 PM on all Taunton/Attleboro routes	4 additional weekday trips			$1,721,000
Plymouth Area Link	Night Service	Extend service to 10 PM on all Plymouth Area Link routes	4 additional weekday trips			$615,000
Wareham Area Link	Night Service	Extend service to 10 PM on all Wareham Area Link routes	4 additional weekday trips			$492,000
FAB/ Tri-town Connector	Night Service	Extend service to 10 PM on FAB/Tri-town Connector	4 additional weekday trips			$246,000

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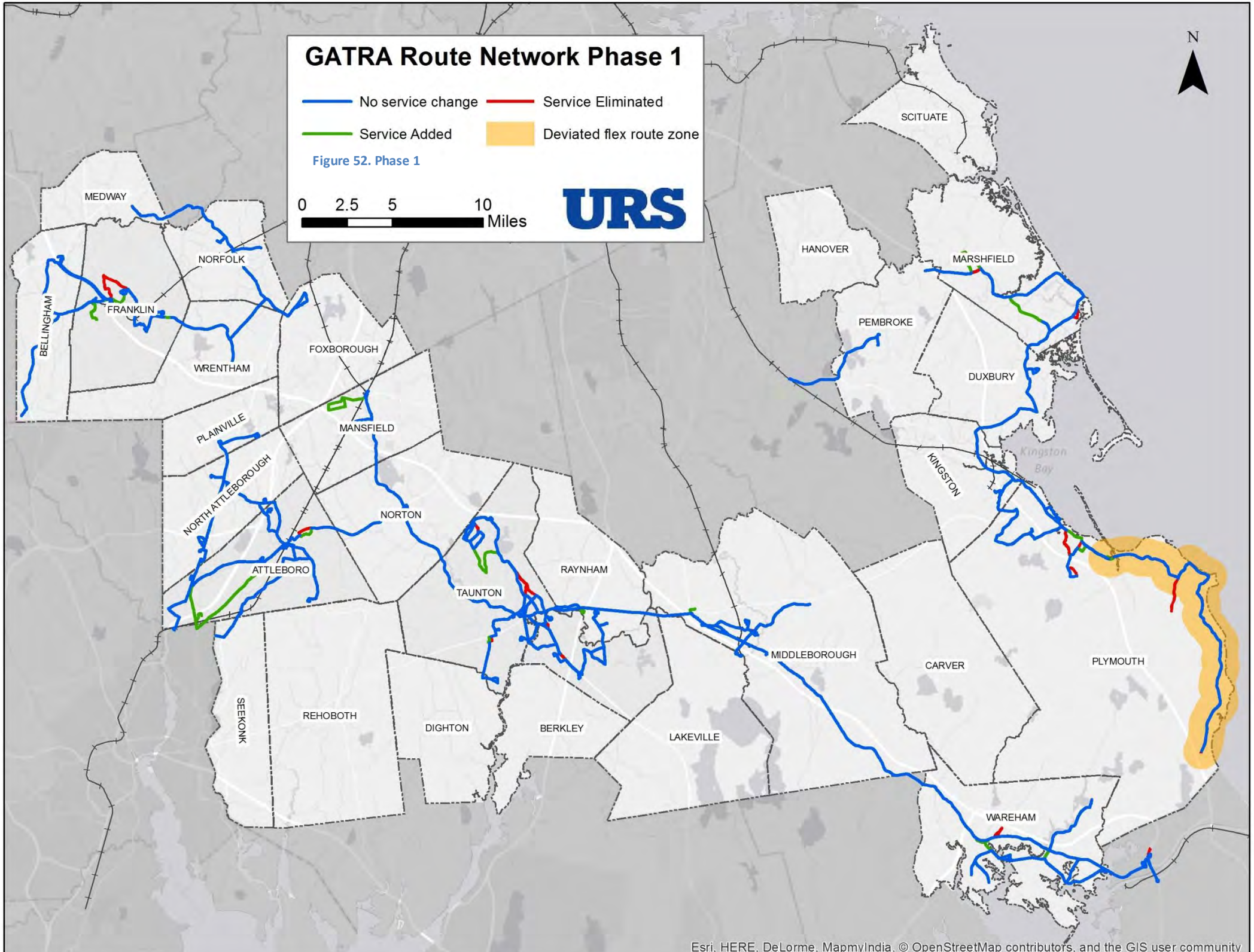

Figure 52. Phase 1

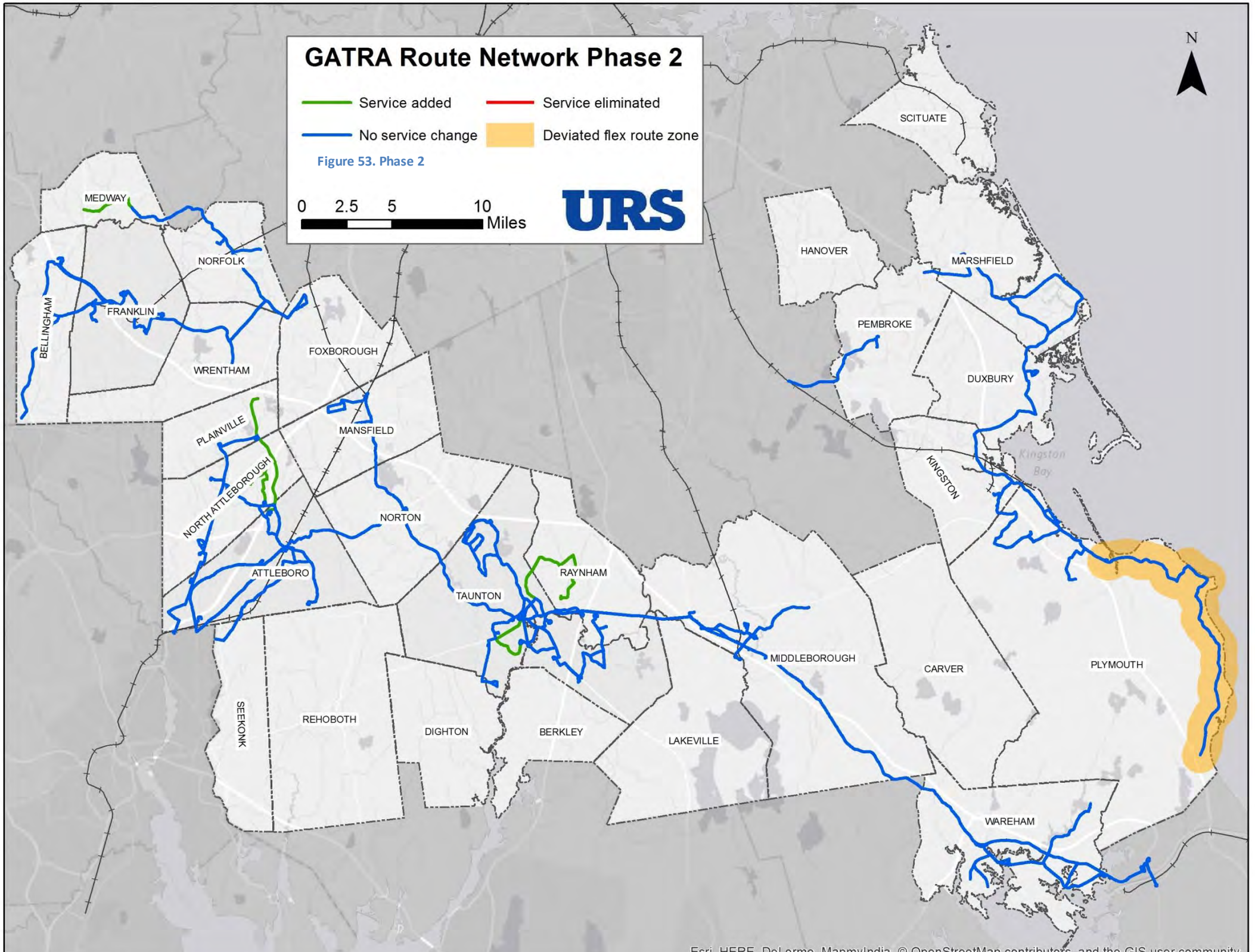

Figure 53. Phase 2

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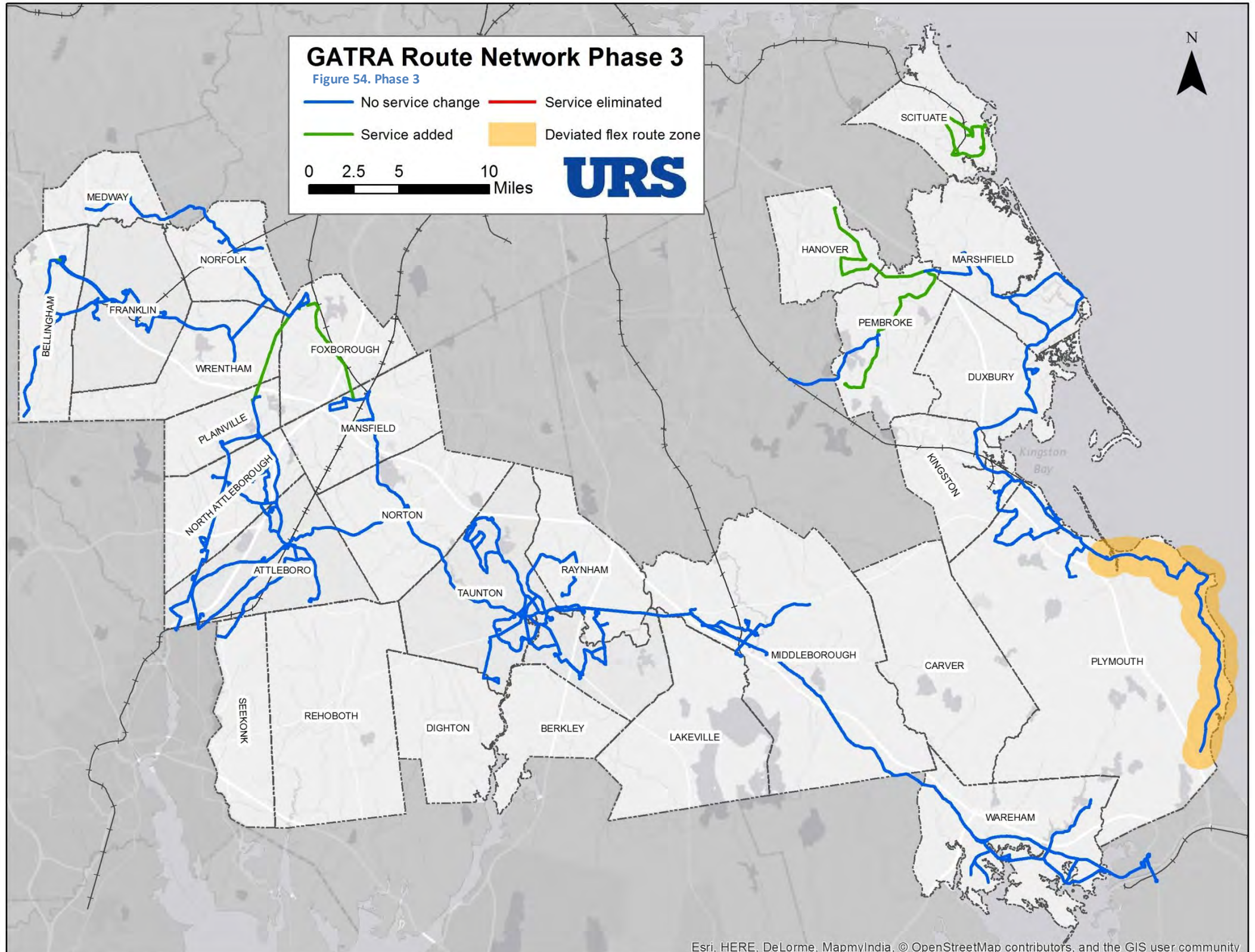
GATRA Route Network Phase 3
Figure 54. Phase 3
No service change
Service eliminated
Service added
Deviated flex route zone
0 2.5 5 10
Miles
URS
N
MEDWAY
NORFOLK
BELLINGHAM
FRANKLIN
WRENTHAM
FOXBOROUGH
PLAINVILLE
MANSFIELD
NORTH ATTLEBOROUGH
NORTON
ATTLEBORO
TAUNTON
RAYNHAM
SEEKONK
REHOBOTH
DIGHTON
BERKLEY
LAKEVILLE
MIDDLEBOROUGH
CARVER
PLYMOUTH
WAREHAM
KINGSTON
Kingston Bay
DUXBURY
PEMBROKE
HANOVER
MARSHFIELD
SCITUATE
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7.4 Cost Estimation

7.41 Operating Costs

Operating costs are based on the average cost of $75 per hour for fixed route service and $46 per hour to provide curb to curb service required by the Americans with Disabilities Act (ADA). The ADA cost was applied only to recommendations in areas not currently covered by the required ¾ mile service area for fixed route transit and incorporates all of the recommendations for each route and phase. The cost can be adjusted by implementing some but all not recommendations or interlining routes to improve efficiency; therefore the final costs may differ slightly from what is proposed. Figure 55 charts the total operational cost for the existing system and the additional costs associated with the service improvements in each phase. For a breakdown of the cost/savings for each route and phase see the recommendation profiles in section 7.5.

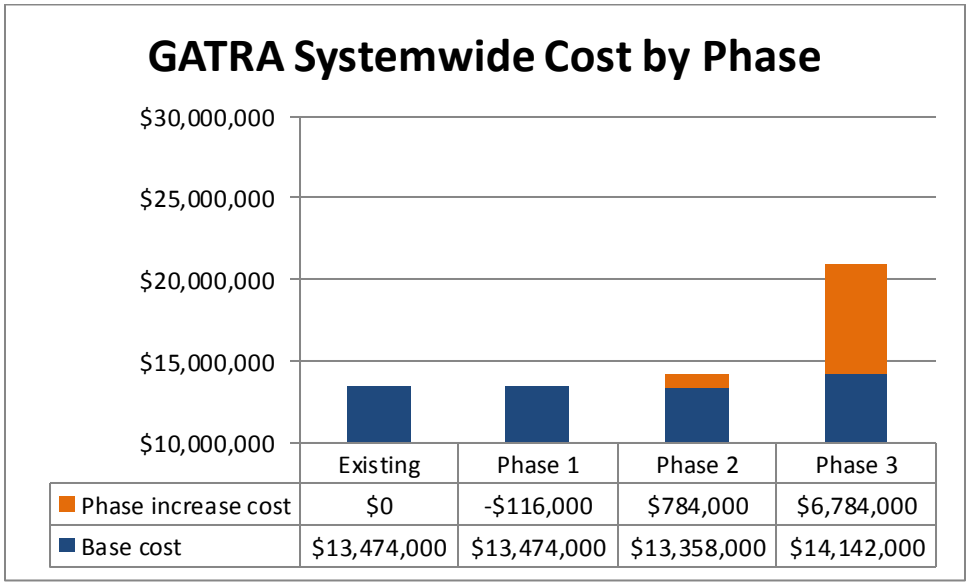

Figure 55. Cost by Phase

7.42 Capital Costs

Capital costs include vehicle and infrastructure costs. In Phase 1 the primary constraint was based on the number of vehicles required in peak service and minimizing cost increases. GATRA currently has a fleet of 46 buses to provide fixed route service. In peak service there are currently 39 vehicles in use. Phase 1 was designed with these constraints (Figure 56). Future phases will require additional vehicles and the procurement process can take up to two years from the time the process begins until the vehicles are delivered and put into service. In order for Phase 3 improvements to be implemented and to maintain their current spare ratio (15%) GATRA's fleet would need to expand from 46 to 53 vehicles as 47 would be needed during the peak. It is recommended though that GATRA increase their spare ratio to the national standard of 20%. With a 20% spare ratio the fleet requirements in Phase 1 would be 47

vehicles, Phase 2 54 vehicles, and Phase 3 59 vehicles. GATRA must begin to plan now for future expansion of the fleet.

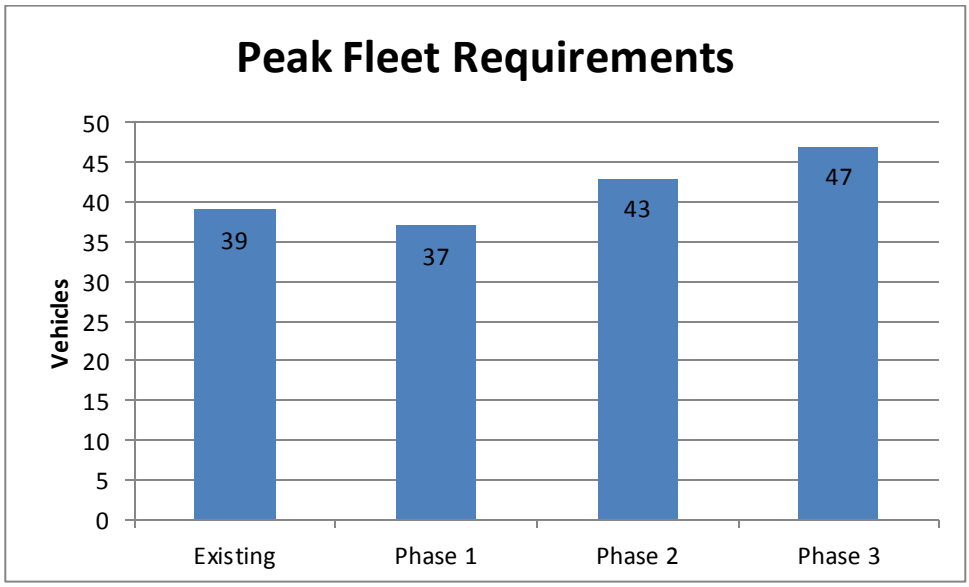

Figure 56. Fleet Requirements by Phase

The decrease in peak fleet size between the existing and Phase 1 is from the realignment of the Mayflower Link and elimination of Route 3. The new route is shorter and will only need one vehicle to maintain the same headway. In Phase 2 six additional vehicles will be needed during the peak. The additional requirements are from adding a bus to the Medway T shuttle, establishing the Plainridge route and adding service during peak times on the Wareham Link routes. Phase 3 would require four additional peak vehicles to establish the Scituate, Foxborough, Hanover/Pembrooke and Route 2 Raynham routes.

7.5 Recommended Service Guidelines

In order to establish service guidelines in the pursuit of establishing a monitoring program in the future, service must first be monitored and data collected. Routes should be defined by the function they service in order to accurately measure the health of a route. Four types of routes are recommended for GATRA: (1) Fixed routes, (2) Deviated-Fixed Routes, (3) Community Shuttle, (4) Commuter Route. Each route type will have in turn different performance measures to monitor existing service and evaluate new service. Table 19 provides an overview of the suggested route type and pairing for existing and recommended GATRA routes.

Fixed Routes – These are routes that operate in densely populated areas and service either the Attleboro Transit Center or Bloom Bus Terminal.

Suburban Fixed Routes- These are routes that operate in suburban areas and service either Plymouth or Wareham Center. They can be deviated routes that will deviate off their path up to

¾ of a mile around the route to serve locations. Deviations are by request only and an additional fare may be charged.

In-Town Shuttle Routes – These routes typically operate in one or two communities and provide a circulating shuttle. They do not service any of the main terminals serviced by the fixed routes.

Commuter Shuttle Routes – These routes may operate only during peak times and their main purpose is to service communities with commuter rail stations. These routes often service Park-and-Ride locations and can have a different fare structure from the rest of the system.

Table 19. GATRA Route Types

Route Type	Routes
Fixed	1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 18, 24,
Suburban	M/C, Mayflower, Link 1, Link 2, Link 3, Link 4, Liberty, Freedom, Sail North, Sail South,
In-Town	FAB, MDS, Hanover/Pembroke, Plainridge, Foxborough, 140, Scituate, Tri-town
Commuter	Medway T, Bellingham North, Bellingham South, Pembroke, W/L

Categories of data to be collected and used in the monitoring program include the following, which are discussed in detail below:

- Ridership
- On-time performance
- Financial
- Service coverage
- Service levels – span and frequency

Passenger boarding data should be collected continually on a time-specific basis. There is a trade-off between data collection efforts and the value of information. It is just as easy to collect too much data as it is to collect insufficient data. Passenger boardings should be recorded daily by route, fare category, and by trip; this information can often be generated through farebox reports. One goal all transit agencies should strive to reach is the implementation of Automatic Passenger Counters (APCs). APCs include capabilities such as recording each passenger by fare category as they board. This function should be programmed into the software as it is implemented. However, even without the benefit of APCs, passenger data can still be collected and recorded by drivers for numerous variables.

With any transit system, it is important to monitor on-time performance. An on-time performance goal should be established (e.g. an attainable on-time goal of 95 percent may be considered). Minor adjustments to routes may be needed to ensure that schedule and headway adherence can be

maintained. If automatic vehicle location (AVL) software is not available to track on-time performance, drivers should report actual arrival and departure times at designated bus stops along the routes and at major stops. It should be emphasized that drivers should not leave prior to a scheduled stop time to make up time along a route. Leaving early could cause riders to miss a bus. The dispatcher should then record this information so that the number of trips running late can be determined.

Financial data is required to evaluate performance measures such as the operating cost per hour of service and the cost per passenger-trip. Financial monitoring should continue as part of the performance monitoring program. Important data to collect and report include operating revenue by source, farebox revenue by fare category, maintenance costs, gas and oil expenditures, and employee-related costs (including salary and benefits).

Service coverage should be based on demand as the area has a wide range of employment and population densities. Before service is expanded to new areas or frequencies increased, density thresholds should be examined (Table 20).

Table 20. Service Thresholds

Jobs & Population per Square mile	Fixed-Route Headway
<2,000	No service
2,000-3,000	120 min or peak only
3,001-6,500	60 Min
6,501-16,000	30 Min
16,001-250,000	15 Min
250,001+	5 Min

It is also important to establish minimum levels of service for each route type. These include service span and frequency. Table 21 below outlines suggested minimum service spans (or number of trips) for each route type. Service can begin earlier or end later if demand warrants. Adjustments to the times can also be made based on the hours of centers served and passengers' needs but should be within the financial capacity of GATRA.

Table 21. Minimum Service Spans

	Fixed Routes	Suburban Routes	In-town Shuttle	Commuter Shuttle
Weekday	6:30 AM – 10:30 PM	7:30 AM - 9:30 PM	6:00 AM – 7:00 PM	5 hours
Saturday	9:00 AM – 6:00 PM	10:00 AM – 5:30 PM	9:00 AM – 5:00 PM	---
Sunday	9:00 AM – 6:00 PM	10:00 AM – 5:30 PM	9:00 AM – 5:00 PM	---

Frequency often has a direct correlation with ridership; higher levels are more attractive to riders but cost more to operate; therefore it is critical to establish frequencies that are high enough to attract riders but not so high that the subsidy is greater than the need. Higher frequency routes require more vehicles and drivers. Clock-face schedules should be used except for under unique circumstances. These

circumstances can include trips that are: designed to meet work shifts or school bell times; that include clock-face schedules that would require excessive recovery time (inefficient service); or that disallow interlining with other routes or miss key transfers. Minimum service frequencies are presented in Table 22 and should correlate to service thresholds established in Table 20. These frequencies represent minimums based on the service spans in Table 21 but can have variations throughout the day such as added service during the peak hours or reduced service at night.

Table 22. Minimum frequencies

Route Type	Frequency
Fixed Route	60 minutes
Suburban Route	60 minutes
In-Town Shuttle	60 minutes
Commuter Shuttle	2 trips during each peak period

If a fixed route, suburban route, or community shuttle has over 500 passengers a day, or productivity greater than 25 passengers per hour then the frequency should be improved to 30 minutes. If the ridership per trip on commuter routes exceeds 10 passengers (if using a COA vehicle) then additional trips should be added.

7.51 New Service Warrants

GATRA often receives requests for new service; new service warrants will help GATRA evaluate proposals and determine service levels. Section 7.63 outlines how to monitor and measure new services. The development of the new services should follow the new service warrants and after two years be able to meet or exceed the performance measures outlined in Section 7.63.

When analyzing new service requests and proposals the following should be considered:

- **Area coverage** – When service is proposed the new route should be evaluated for its ability to connect to other routes, meet service thresholds, and operate cost effectively. Routes that extend beyond the service area may have a demand but the increased miles/hours may cause the subsidy to be greater than those recommended in the performance measures.
- **Transit dependent populations** – The presence of transit dependent populations should be considered when evaluating new service proposals. If there is a high but remote transit dependent population, alternative service types such as Dial-A-Ride or flex routes might be warranted.
- **Special markets** – New service is often proposed for special markets such as a new shopping center, university campus, or employment center. These markets often produce demand but the cost to service them can be high and ridership potential undetermined. GATRA should work with these destinations to secure some dedicated funding which can help bring down the cost of the route.

7.6 Performance Measures

Performance measures serve as a guide to evaluate the success of a transit service. Performance measures include the types of data to be collected and give the tools necessary to identify transit system opportunities and deficiencies. Performance measures should:

- Be easily measurable.
- Have a clear and intuitive meaning so that it is understandable to those who will use it and to non-transportation professionals.
- Be acceptable and useful to transportation professionals.
- Be comparable across time and between geographical areas.
- Have a strong functional relationship to actual system operations so that once changes occur in service operations, changes to the system can readily be determined.
- Provide the most cost-effective means of data collection.
- Where appropriate, be based on statistically sound measurement techniques.
- Be consistent with measures identified for other systems.

Recommended performance measures to monitor existing and future routes could include:

- **Passengers/Hour:** Number of total monthly and annual passengers divided by the corresponding revenue-hours.
- **Subsidy/Passenger:** Total expenses minus fare revenue divided by ridership.
- **Farebox Recovery:** The percentage of operating costs covered by fares collected, calculated by the fares collected divided by the cost to operate the route.
- **Cost/Revenue-Hour:** An excellent indicator of efficiency is cost per revenue-hour of service. Costs per hour should be analyzed by route and compared to overall system averages.
- **Late Trips:** The percentage of fixed-route trips which operate late or are missed should be recorded and reported. The recommended standard for late trips is any trip that is more than five minutes behind schedule.
- **Service/Road Calls:** the number of service/road calls divided by the number of revenue miles. This measure is typically measured for the entire system and not individual routes. This monitors routine maintenance and vehicle performance.
- **Accidents/100,000 miles:** Measure of driver safety. There must be a standard practice for defining what an accident is.

7.61 Service Benchmarks

The aforementioned performance measures can be used to create benchmarks for service operation. The benchmarks will help GATRA track progress and set goals for the performance of the route. These benchmarks should be seen as short-term goals that should be re-evaluated at set intervals—at least every five years—to ensure that the expectations for the route are consistently evolving. If a specific benchmark has been greatly exceeded during the first two years of operation, the criteria should be changed to provide a progressive target for the service. The following benchmarks were determined by the base type of service, national best standards and the current performance.

Passengers per Hour

Passengers per hour measures ridership as a function of the amount of service provided and will vary based on the type of route. Table 23 outlines the threshold for route/service types which can be used to monitor the route. As system-wide service improves these values should be adjusted to reflect the change and re-evaluated every 3-5 years. They are based on current performance and best practices. If routes are performing at 75% or below of the benchmark then the route may need to be evaluated to determine remedies to improve performance.

Table 23. Passenger per Hour

Route Type	Passengers per Hour
Fixed Route	10
Suburban Route	7
In-Town Shuttle	4
Commuter Shuttle	5 per trip

Subsidy per Passenger

Subsidy per passenger measures the cost of providing service, taking into account fare revenue collected. As with passengers per hour, as system-wide service improves these values should be adjusted to reflect improvements and should be reevaluated every 3-5 years. GATRA should strive to have a subsidy per passenger less than those presented in Table 24. If subsidies are more than 50% higher than the benchmark and the route does not have a dedicated source of funding, then the route may need to be evaluated to determine remedies to improve performance.

Table 24. Subsidy per Passenger

Route Type	Subsidy per passenger
Fixed Route	$5
Suburban Route	$7.25
In-Town Shuttle	$14
Commuter Shuttle	$8.75

Farebox Recovery

Long term GATRA should strive to achieve a 20% farebox recovery ratio or better. To achieve this goal GATRA should set an intermediate goal of a recovery ratio of **12%** on all routes for the next five years. If the ratio drops on a route to below 6% then the route may need to be evaluated to determine remedies to improve performance.

Cost per Revenue Hour

Cost per revenue hour by route should be related to the average of the system so that it can change as service is added or subtracted or funding sources change.

Table 25 provides a guideline for monitoring this benchmark.

Table 25. Cost per Hour Performance Standard Criteria

Performance	Percentage of Average	Action
Very Low	0%-50%	Immediate action
Low	51%- 75%	Subject to review
Average	75%-150%	No action needed
High	150%+	Evaluate for service improvements

For those routes performing under 50% immediate actions are listed in section 7.62. Routes falling within the 50%-75% range are routes that are candidates for monitoring service. Routes falling within the 75%-150% range are routes that are performing well and require no action. 150%+ routes indicate high performing routes which may benefit from increased service.

Late Trips
Late trips measure on-time performance and help evaluate a vehicle's adherence to a schedule. A trip is considered on-time if it departs a timepoint no more than five minutes late; no trips should leave early. The recommended best practice for on-time performance nationwide is **95%**; GATRA should strive to meet this benchmark.

Service/Road Calls
Vehicle breakdowns are inevitable. This measure tracks the distance traveled between mechanical breakdowns. Although frequent occurrences can create disruptions in a transit system, it is important to track the frequency and type of mechanical failures of each vehicle in addition to monitoring a fleet's age. Monitoring of vehicle breakdowns is one method of reducing system disruptions and may allow an agency to improve monitoring of vehicle replacement schedules and preventative maintenance practices. Data collection efforts should include date, time of day, type of failure, age of vehicle, vehicle number, vehicle mileage, and how the situation was rectified. Monitoring of these items will allow GATRA to recognize patterns in repeated types of mechanical breakdowns; breakdowns related to vehicle type, age or mileage; and assist with preventative maintenance programs. Wheelchair lift failures should also be monitored. GATRA should strive for **20,000 miles or more** between road calls.

Accidents per 100,000 Miles
The FTA suggests that at a minimum transit providers strive towards the goal of six accidents or less per 100,000 miles. GATRA should seek to exceed that minimum with no more than **three (3) accidents per 100,000 miles**. The measure can be calculated by dividing the number miles by the number of accidents in a given time period. Values lower than 33,333 indicate that the indicator is not being met.

7.62 Action for Low Performing Routes

If routes are not meeting at least two out of the three main indicators (passenger per hour, subsidy per passenger, farebox recovery) or fall beyond the minimum suggested values (6% farebox recovery, 50% of the subsidy per passenger by route type, 75% of the passenger per hour by service type or "very low" performance score for cost per hour), they should be evaluated for possible modification. The following actions may help improve route performance:

Change service level – Some low performing routes may not warrant increased service frequency; yet routes with very few trips may not attract riders. High frequency routes that are low performing should be evaluated for service changes. Low frequency routes can be evaluated for trip additions to determine if the low performance is related to minimal service. This analysis should be done in conjunction with outreach to determine if extra trips would garner higher ridership.

Segment identification – A segment level analysis of a route might highlight a portion of the route that causes the overall poor performance. This segment can be modified to help improve the overall route.

Marketing – Marketing can help raise the public awareness of a route. Ridership can be poor because the public lacks knowledge of the service. A marketing/educational campaign can help improve performance statistics.

Public outreach – On-board surveys or rider interviews can help gain information about how the route can be improved.

Span identification – Evaluating the performance at different time periods throughout the day may help identify time periods or trips that garner very little ridership. For example the last trip of the day may have very low productivity and bring down the performance of the entire route.

Subsidy reduction – If the subsidy per passenger is high one way to reduce it is to explore cost sharing partnerships with external funding sources. Examples include schools/colleges, large housing complexes, shopping centers, and places of employment. Another method is to work with local employment centers to coordinate the sale of passes with employee incentives.

Discontinuation – Discontinuation is the last option for dealing with a low-performing route and should only be implemented once other measures have been tried but the route is still under performing. A whole route or segment can be discontinued. Routes should not be discontinued until other remedial actions have been tried and the service has been monitored for at least sixth months and there is still no improvement on the route.

7.63 New Service Performance Evaluation

Once a new route or service has been implemented, it should be monitored for an initial period to evaluate its performance. At the onset the route may not meet the benchmarks set forth for existing routes, but as the service becomes more popular it may. New services should be implemented for a period of at least one year in order to garner ridership and monitor monthly fluctuations. While minor changes such as timing can be made to the route within the initial period, large changes should be avoided. On-time data should be checked randomly to ensure that performance remains acceptable; a new service that has low on-time performance will have a difficult time attracting ridership. Approximately halfway through the initial period (6 months) a passenger survey of the route should be

conducted to understand the effectiveness of the route. The route should continue to be monitored as a 'new route' beyond one year if ridership has had continual growth. Once ridership has plateaued the route can be evaluated against the aforementioned benchmarks with the other routes.

7.7 Recommendation Profiles

The following route profiles depict the proposed recommendation changes.

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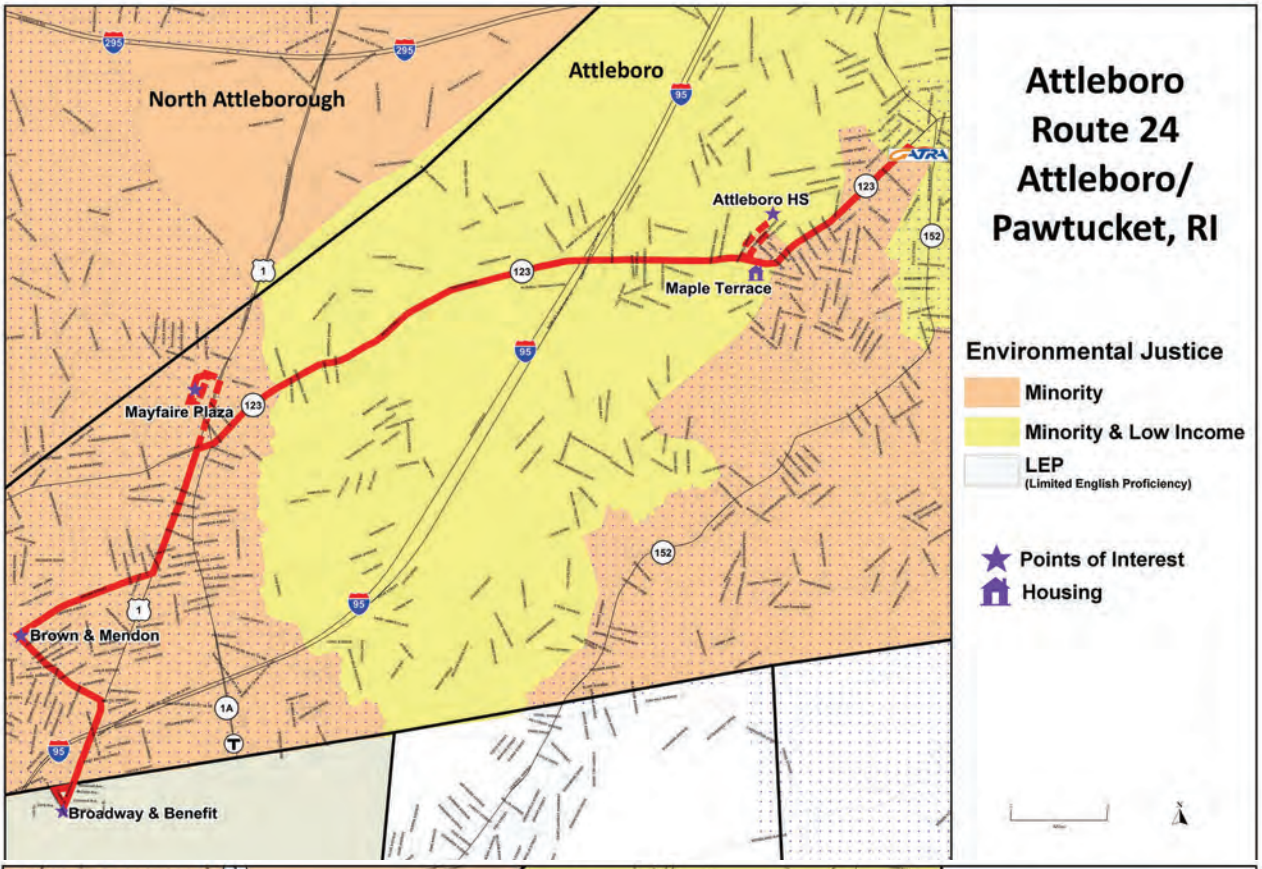
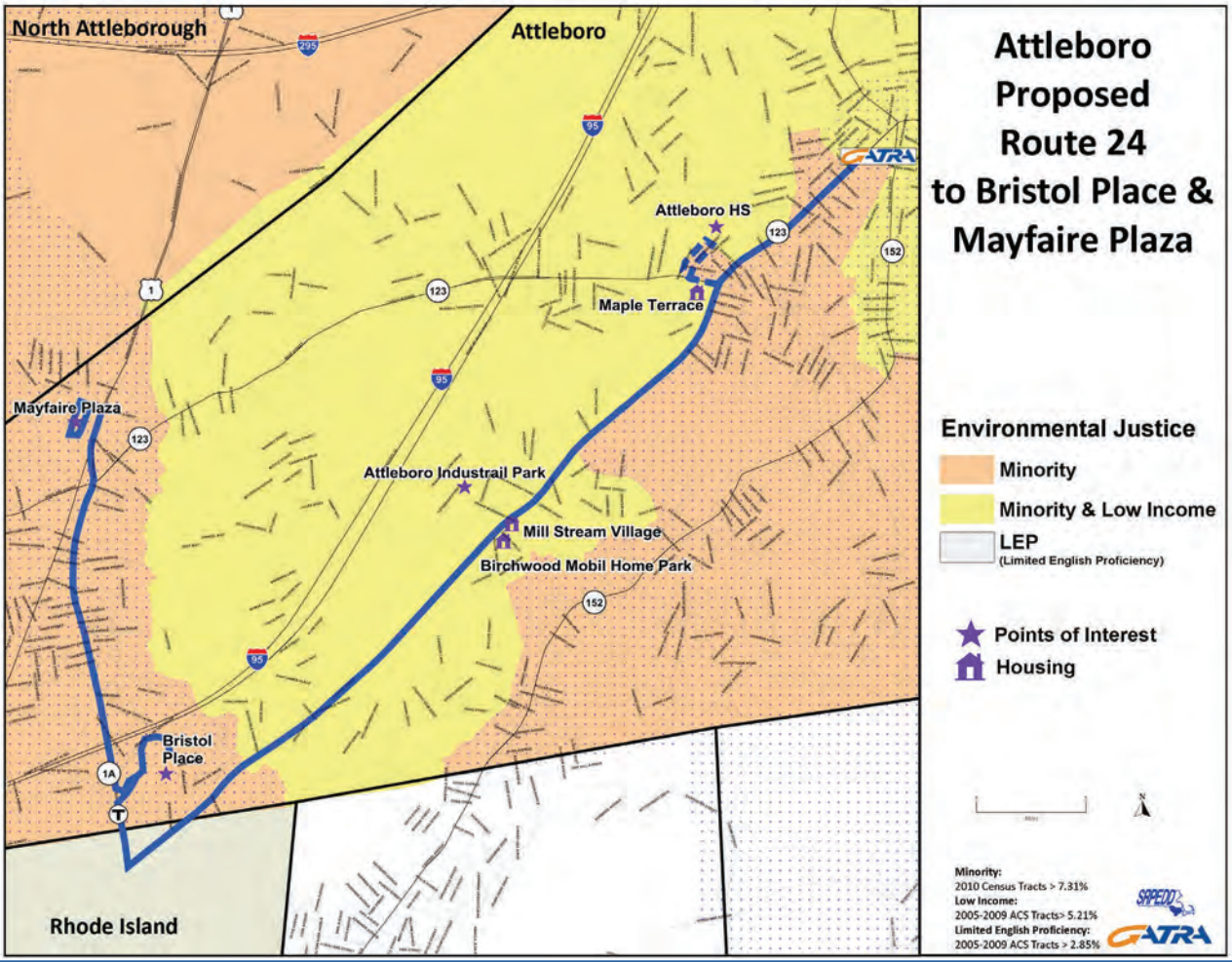
Route 24

Attleboro/Pawtucket, RI





Route 24

Attleboro/Pawtucket, RI

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 24	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	129	127
Avg. Saturday Ridership	N/A	83
Sunday Ridership	N/A	N/A
Passengers/Hr	13.72	12.0
Saturday Passengers/Hr	N/A	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 24	System Average (Attleboro/Taunton)
Farebox Recovery	11.9%	8.2%
Weekday Subsidy per passenger	$5.16	$7.01
Saturday Subsidy per passenger	N/A	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route

Route Ranking: 8/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Fri.	Mon.-Sun.
Route Length	17 miles	17.2 miles
Route Run—Time	42 min.	42 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	N/A	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	5:30 AM – 6:53 PM	5:30 AM – 10:53 PM
Hours of Operation Saturday	N/A	8:30 AM –6:00 PM
Hours of Operation Sunday	N/A	8:30 AM—6:00 PM

Route Alignment Changes:

Route 24's alignment would be completely rerouted to serve County Street to US-1A, serve Bristol Place and terminate at the Mayfair Plaza.

Phase 1:

-Route realignment +$129,000

Phase 2:

-None

Phase 3:

-Implement Sunday service +$57,000

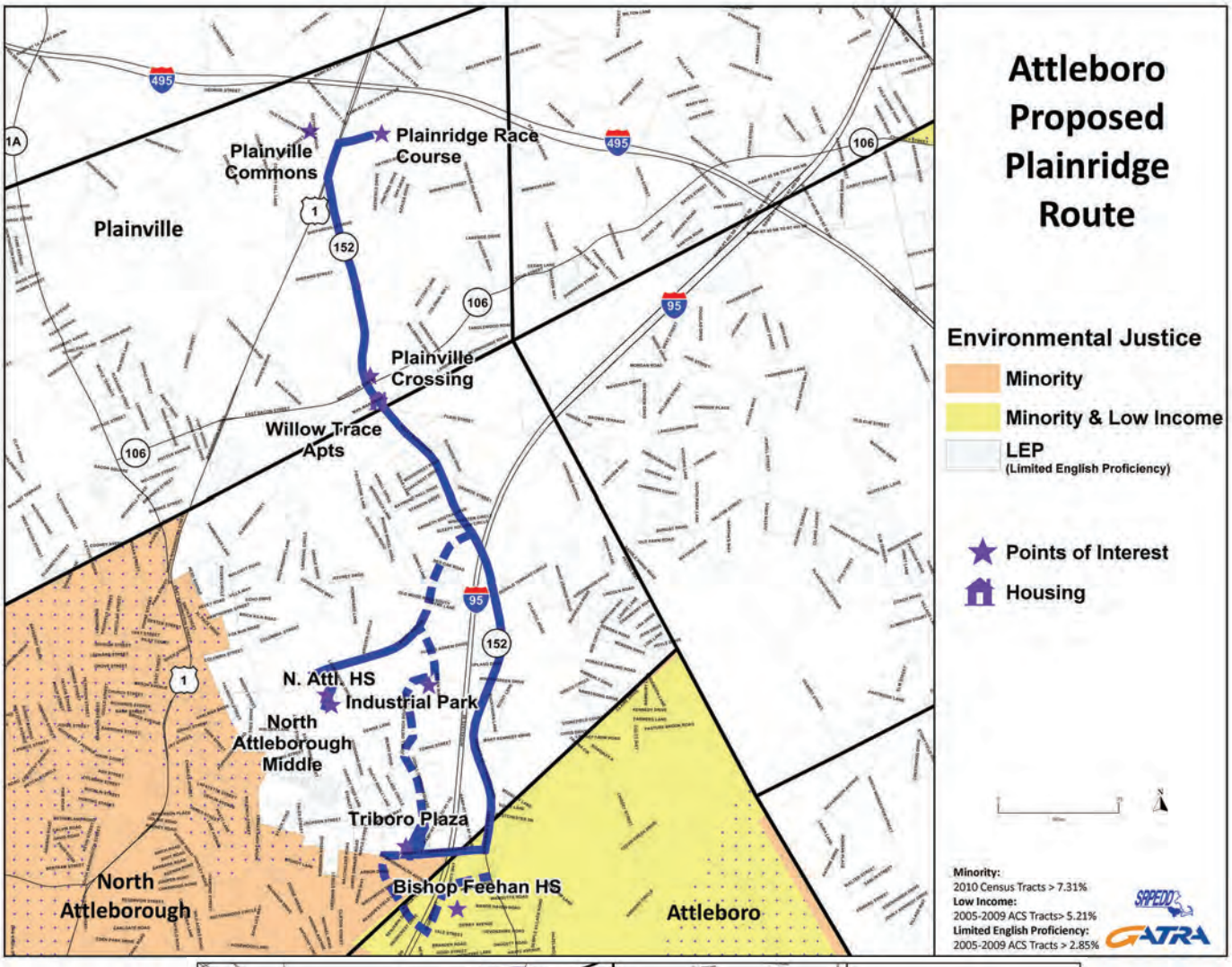
-Implement night service +$123,000

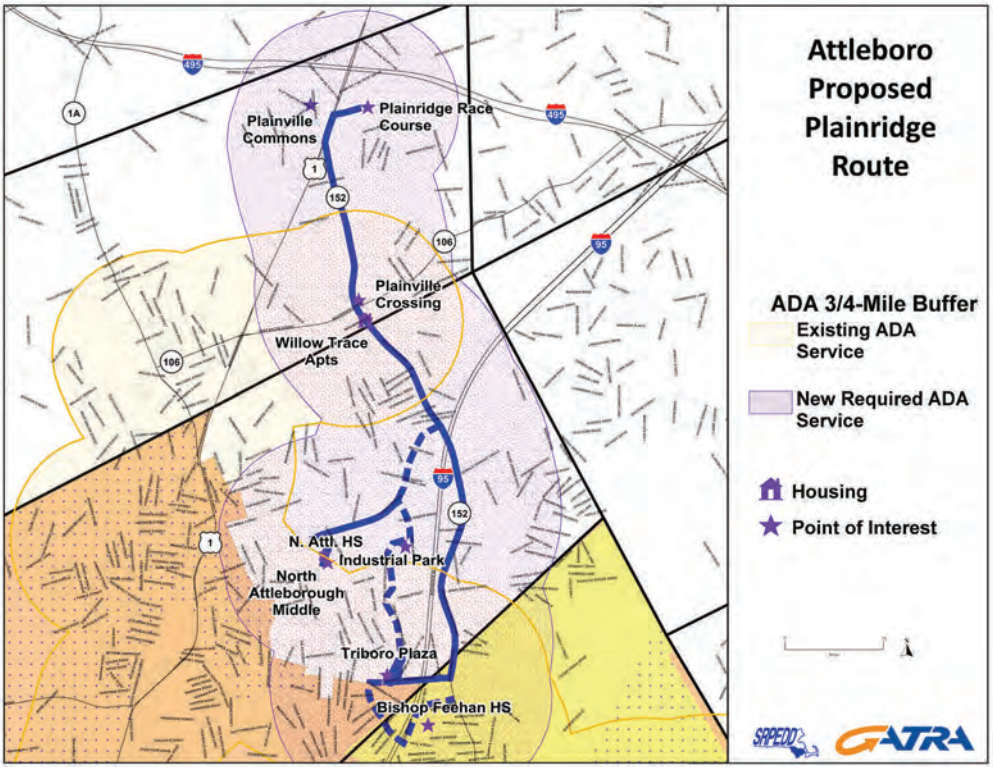
ADA Impact:

With the creation on this route and Sunday and night service, ADA service would need to be implemented.

Other Notes:

When creating the schedule for Route 24, the South Attleboro MBTA arrival/departure time points will have to be taken into consideration in order to create a connection.


Attleboro Proposed Plainridge Route
Plainville Commons
Plainridge Race Course
Plainville
Plainville Crossing
Willow Trace Apts
N. Attl. HS
Industrial Park
North Attleborough Middle
Triboro Plaza
Bishop Feehan HS
North Attleborough
Attleborough
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Housing
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%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N. Attl. HS
Industrial Park
North Attleborough Middle
Triboro Plaza
Bishop Feehan HS
ADA 3/4-Mile Buffer
Existing ADA Service
New Required ADA Service
Housing
Point of Interest

Plainridge

Plainridge Route

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route	System Average
Avg. Daily Weekday Ridership	N/A	127
Avg. Saturday Ridership	N/A	83
Sunday Ridership	N/A	N/A
Passengers/Hr	N/A	12.0
Saturday Passengers/Hr	N/A	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route	System Average (Attleboro/Taunton)
Farebox Recovery	N/A	8.2%
Weekday Subsidy per passenger	N/A	$7.01
Saturday Subsidy per passenger	N/A	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route

Route Ranking: N/A

Proposed Service Changes

	Current	Proposed
Days Operated	N/A	Mon.-Sun.
Route Length	N/A	14 miles
Route Run—Time	N/A	40 min.
Weekday Headway	N/A	60 min.
Saturday Headway	N/A	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	N/A	5:50 AM – 11:00 PM
Hours of Operation Saturday	N/A	9:10 AM - 5:00 PM
Hours of Operation Sunday	N/A	9:10 AM - 5:00 PM

Route Alignment Changes:

Create a new route to serve the Plainridge Park Casino. The route would travel from the Triboro Plaza to Plainridge via Route 152. North Attleborough High School, as well as Bishop Feehan High School, would be served as a deviation.

Phase 1:

-None

Phase 2:

-Implement route +$339,000

Phase 3:

-Implement Sunday service +$49,000

-Implement night service +$123,000

ADA Impact:

The majority of the 3/4-mile buffer around this new route is being served by GATRA's existing ADA service. However, there will be a need to add additional service (roughly 2.5 miles) to completely serve the 3/4-mile buffer around this new route.

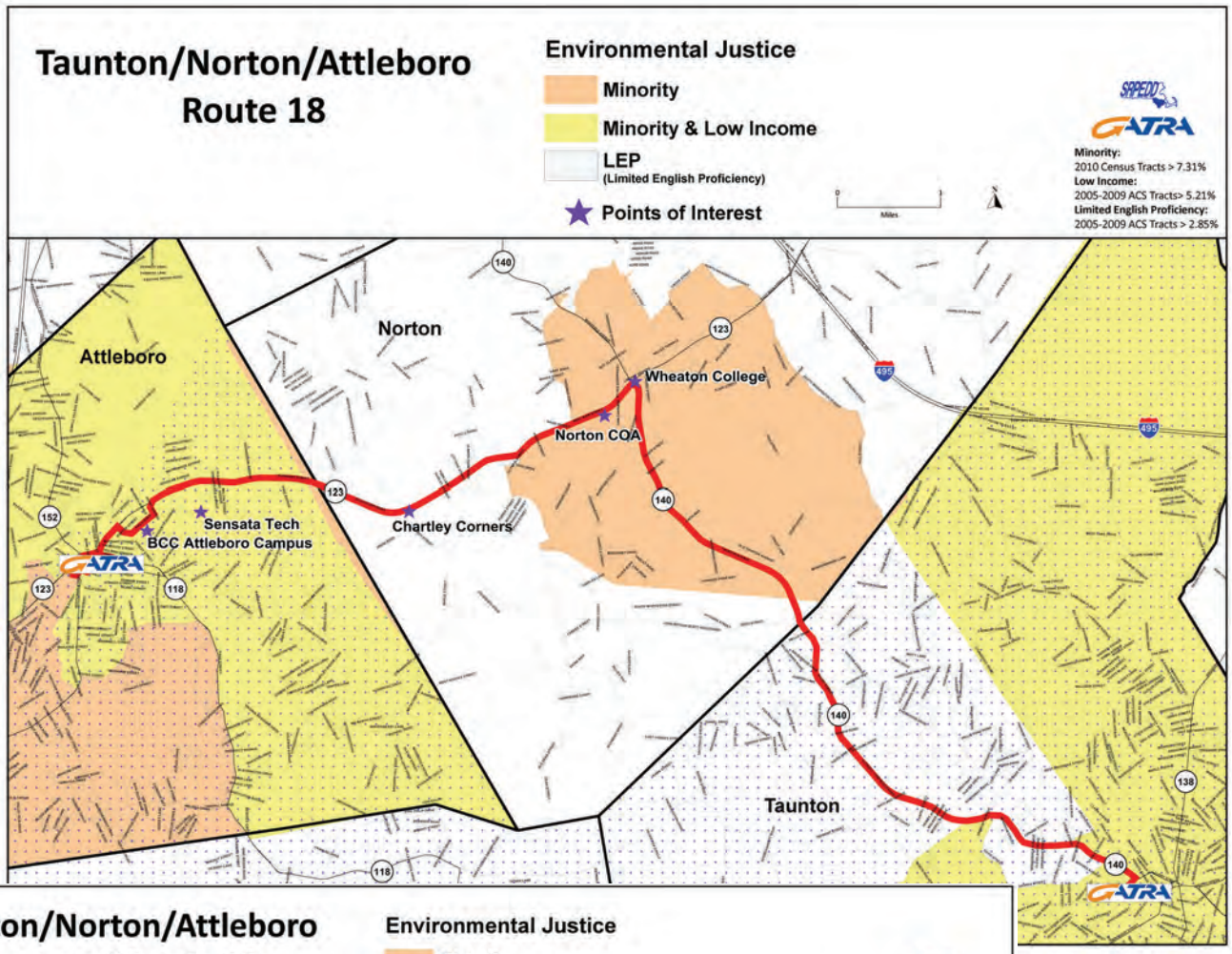
Other Notes:

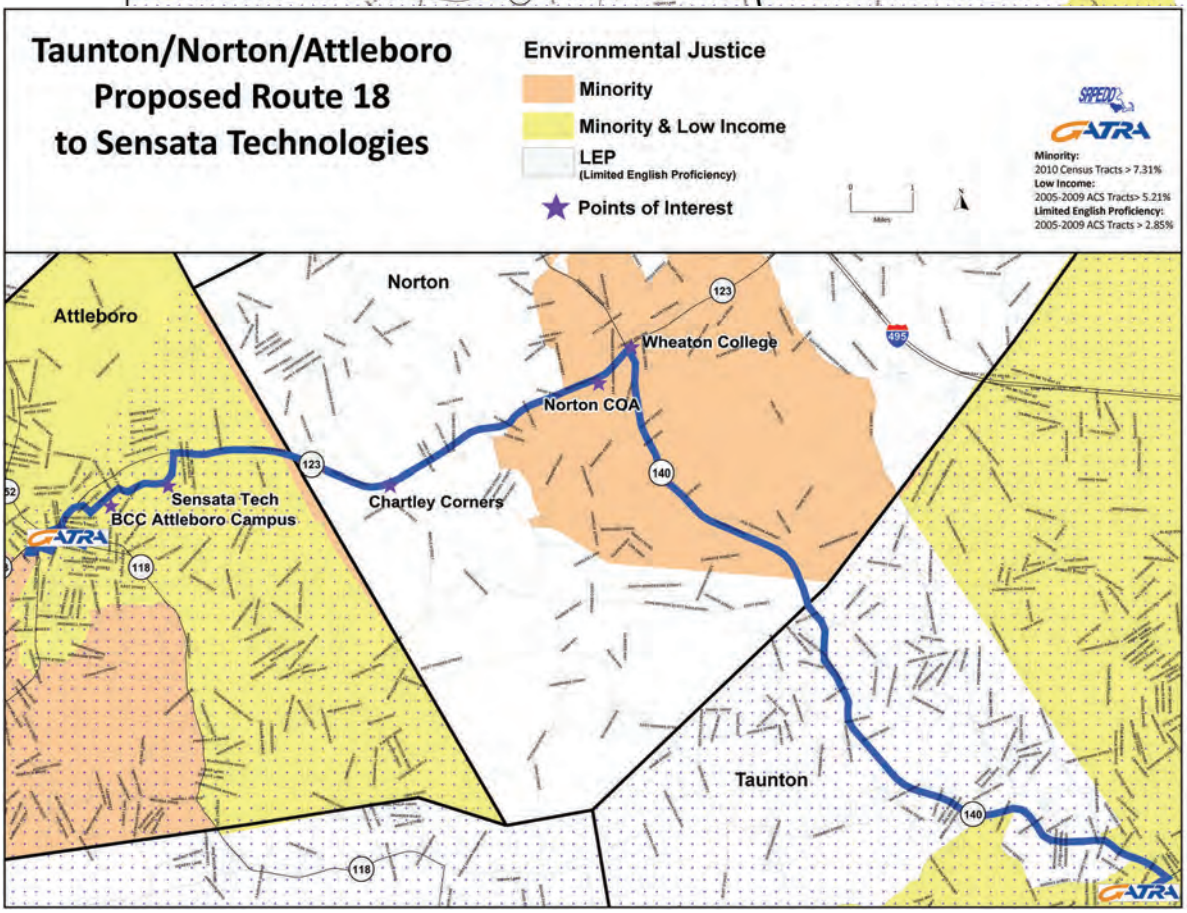
This route would meet Route 14 at Triboro Plaza and at Plainville Crossing.

Route 10 would also meet this route at Triboro Plaza.

Route 18

Taunton/Norton/Attleboro





Route 18

Taunton/Norton/Attleboro

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 18	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	150	127
Avg. Saturday Ridership	38	83
Sunday Ridership	N/A	N/A
Weekday Passengers/Hr	10.9	12.0
Saturday Passengers/Hr	6.3	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 18	System Average (Attleboro/Taunton)
Farebox Recovery	9.5%	8.2%
Weekday Subsidy per passenger	$6.66	$7.01
Saturday Subsidy per passenger	$12.04	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attleboro/Taunton

Route Ranking: 14/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	26.6 miles	28 miles
Route Run—Time	65 min.	65 min.
Weekday Headway	Varies	Varies
Saturday Headway	Varies	Varies
Sunday Headway	N/A	Varies
Hours of Operations M-F	5:00 AM – 7:56 PM	5:00 AM – 11:56 PM
Hours of Operation Saturday	7:45 AM - 6:41 PM	7:45 AM - 6:41 PM
Hours of Operation Sunday	N/A	7:45 AM - 6:41 PM

Route Alignment Changes:

Route 18 will maintain its current route from Taunton to Attleboro via Norton with a minor route alignment change in Attleboro to serve Sensata Technologies. The route alignment change would be Pleasant St. to East Access Road to Perry Ave. to Field Street.

Phase 1:

-Service Sensata Technologies $0

Phase 2:

-None

Phase 3:

-Implement Sunday service +$57,000

-Implement night service +$123,000

ADA Impact:

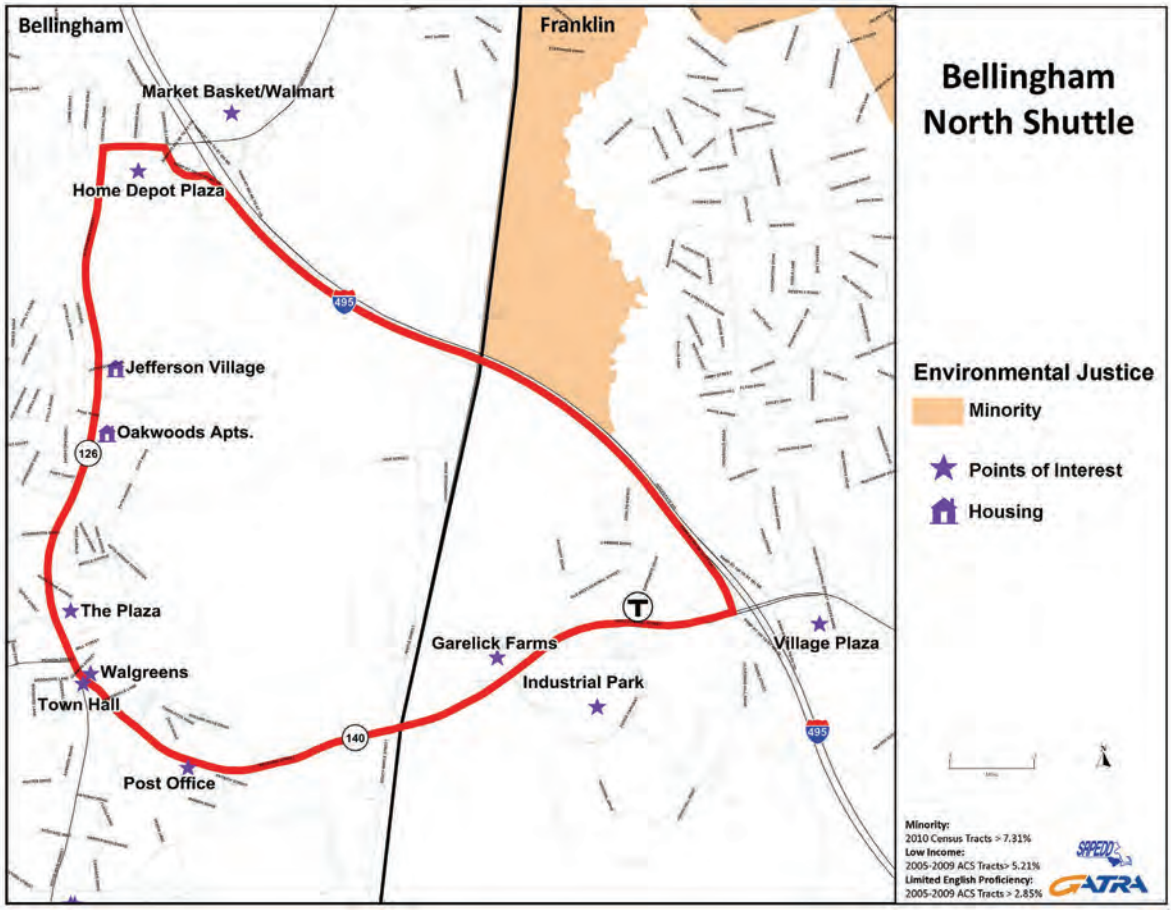
There will be no impact on ADA service.

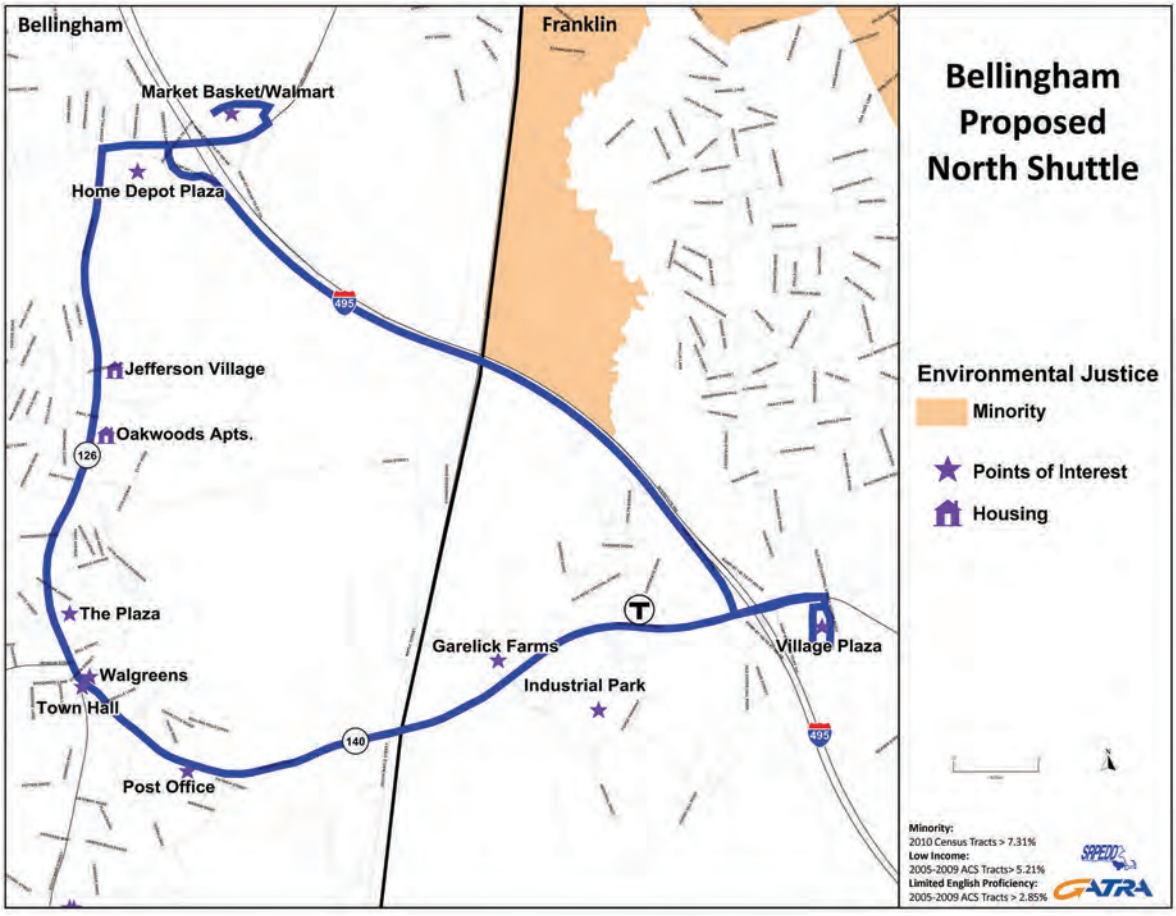
Other Notes:

Sensata Technologies is not currently served by fixed route transit, however the workforce generates a demand for transit. Twenty-four online comments were received in support of service to Sensata Technologies.

Bellingham T Shuttle

North Bellingham T Shuttle





Bellingham T Shuttle

North Bellingham T Shuttle

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route	System Average (Northwest)
Avg. Daily Weekday Ridership	19	34
Avg. Saturday Ridership	N/A	N/A
Sunday Ridership	N/A	N/A
Passengers/Hr	6.2	15.4
Saturday Passengers/Hr	N/A	N/A
Sunday Passengers/Hr	N/A	N/A

Financials	Route	System Average (Northwest)
Farebox Recovery	9.0%	8.2%
Weekday Subsidy per passenger	$11.82	$11.83
Saturday Subsidy per passenger	N/A	$11.83
Sunday Subsidy per passenger	N/A	N/A

Route Type: Commuter Shuttle, Northwest

Route Ranking: 25/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Fri.	Mon.-Sun.
Route Length	8.5 miles	9.4 miles
Route Run—Time	25 min.	35 min.
Weekday Headway	Varies (avg. 35 min.)	45 min.
Saturday Headway	N/A	45 min.
Sunday Headway	N/A	45 min.
Hours of Operations M-F	6:10 AM – 7:35 AM & 4:28 PM – 7:06 PM	6:10 AM – 7:06 PM
Hours of Operation Saturday	N/A	8:30 AM – 6:00 PM
Hours of Operation Sunday	N/A	8:30 AM—6:00 PM

Route Alignment Changes:

Pilot midday service on the Bellingham Shuttle with service to Market Basket/ Wal-Mart and Village Plaza. The route alignment would remain the same with the exception of adding service to Market Basket/Walmart as well as to Village Plaza in Franklin.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement all changes +$415,000

ADA Impact:

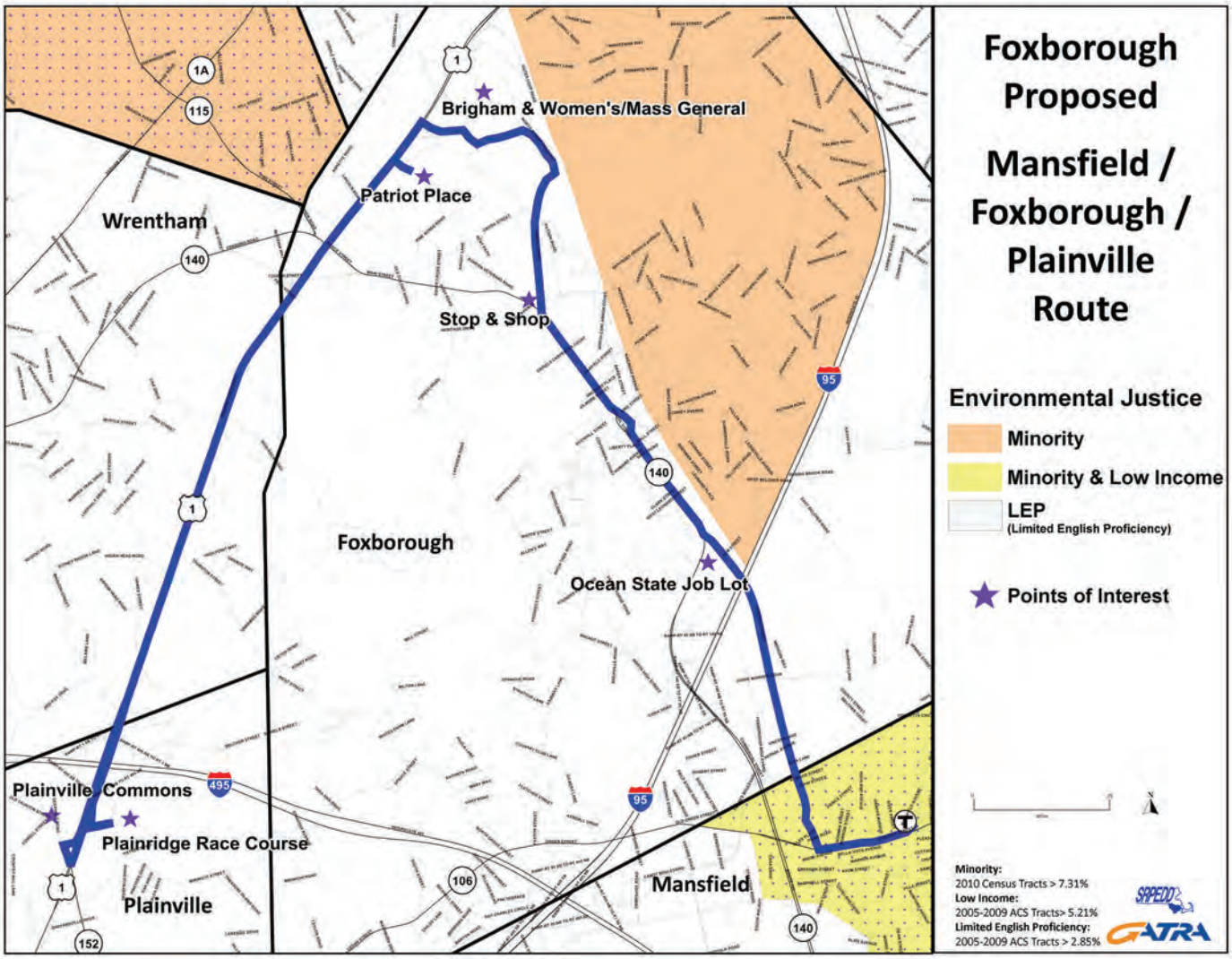
Turning this commuter shuttle into a fixed route would require ADA service to be implemented.

Other Notes:

Midday service was included as a recommendation in the MAPC SWAP Regional Public Transit Feasibility Study, dated October 3, 2013.

If successful, Saturday service could be added.

This route would also connect to the Franklin Area Bus route.


Foxborough Proposed
Mansfield / Foxborough / Plainville Route
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Brigham & Women's/Mass General
Patriot Place
Stop & Shop
Ocean State Job Lot
Wrentham
Foxborough
Plainville Commons
Plainridge Race Course
Plainville
Mansfield
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Foxborough

Mansfield/Foxborough/Plainville

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route	System Average (Northwest)
Avg. Daily Weekday Ridership	N/A	34
Avg. Saturday Ridership	N/A	N/A
Sunday Ridership	N/A	N/A
Passengers/Hr	N/A	15.4
Saturday Passengers/Hr	N/A	N/A
Sunday Passengers/Hr	N/A	N/A

Financials	Route	System Average (Northwest)
Farebox Recovery	N/A	8.2%
Weekday Subsidy per passenger	N/A	$11.83
Saturday Subsidy per passenger	N/A	$11.83
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Northwest

Route Ranking: N/A

Proposed Service Changes

	Current	Proposed
Days Operated	N/A	Mon.-Sun.
Route Length	N/A	25 miles
Route Run—Time	N/A	80 min.
Weekday Headway	N/A	90 min.
Saturday Headway	N/A	90 min.
Sunday Headway	N/A	90 min.
Hours of Operations M-F	N/A	13 hours
Hours of Operation Saturday	N/A	10.5 hours
Hours of Operation Sunday	N/A	10.5 hours

Route Alignment Changes:

A new route would be created between the Mansfield MBTA station and the Plainridge Park Casino and serve Patriot Place. The route would travel from the Mansfield MBTA station to Stop & Shop and Patriot Place via Route 140. From Patriot Place it would travel to the Plainridge Park Casino via Route 1.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Cost to implement $513,000

ADA Impact:

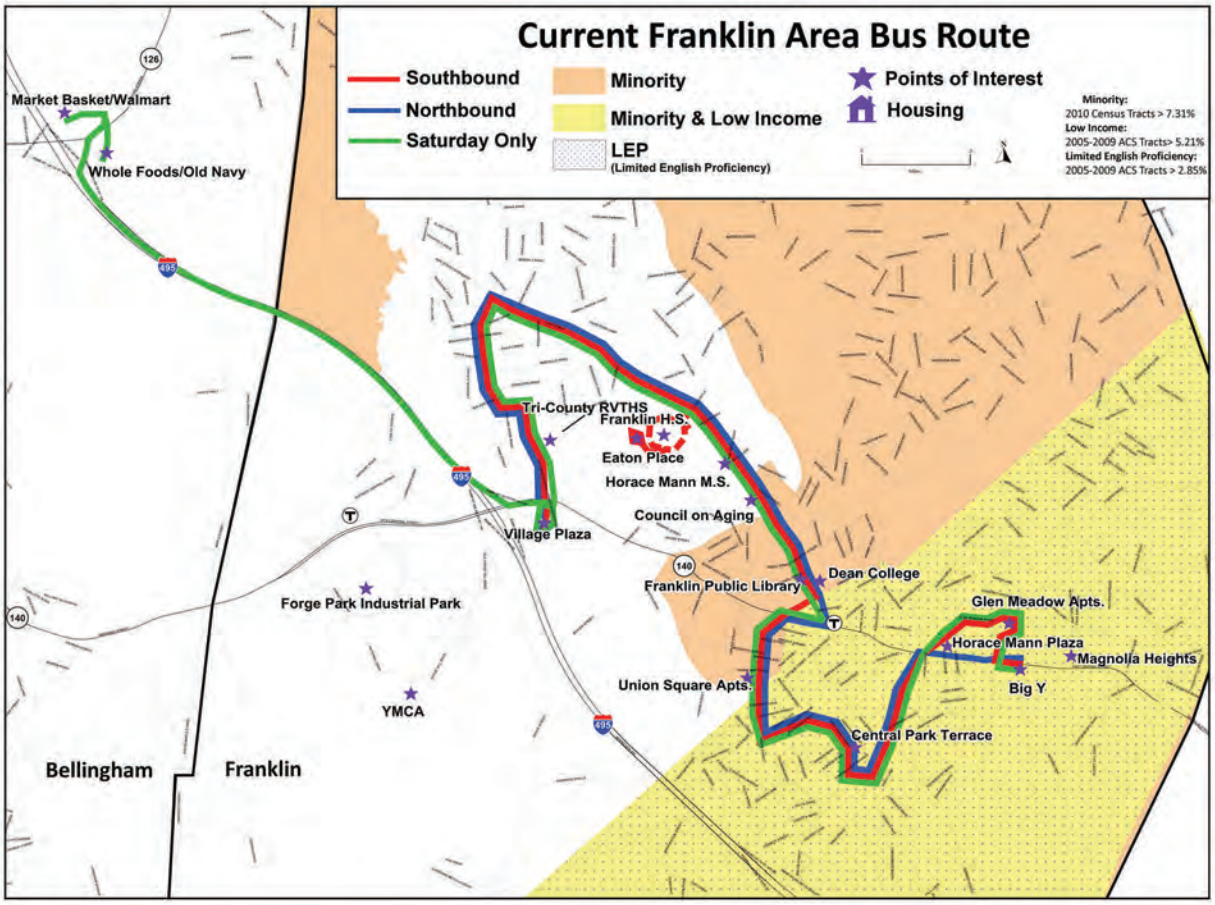
There is currently no ADA service in Foxborough. With the creation of this route ADA service would need to be implemented.

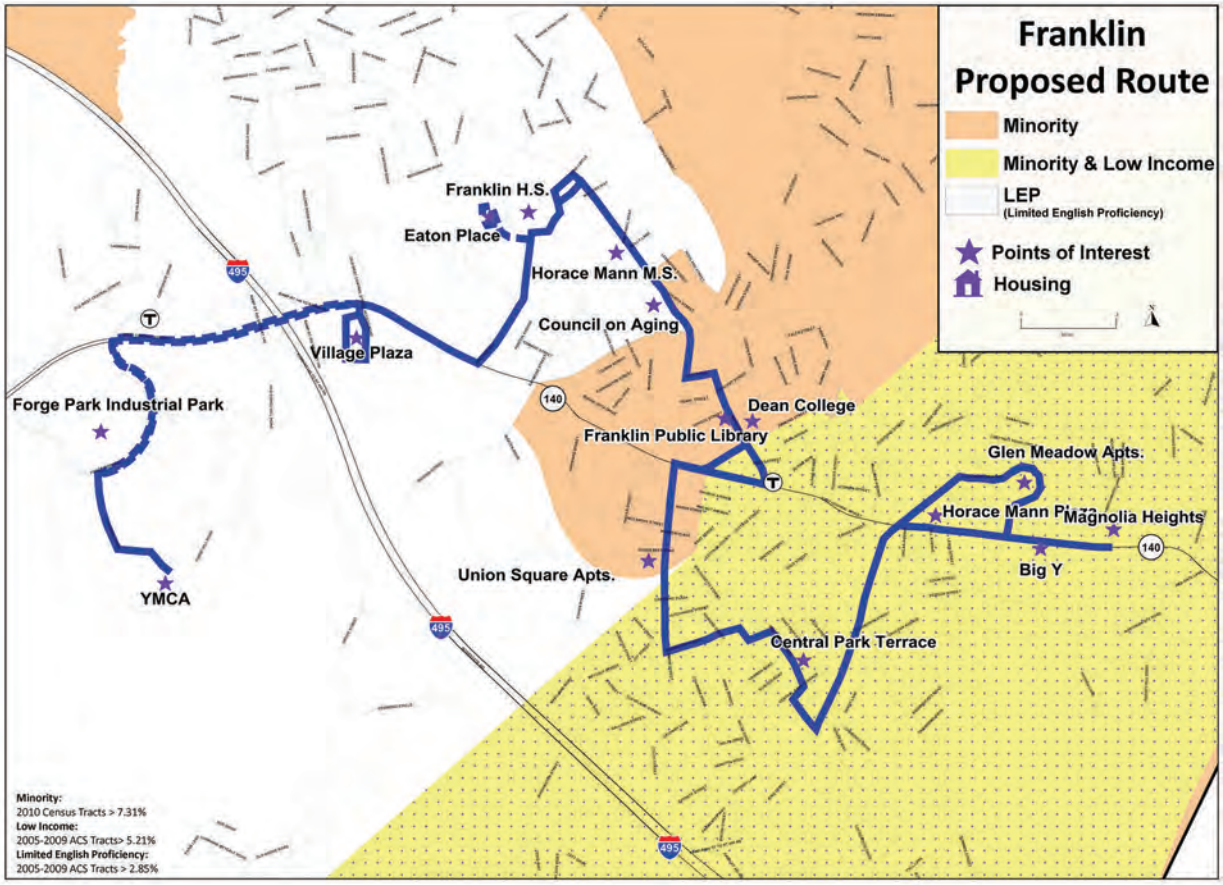
Other Notes:

This route would meet the new Plainridge Route at the Plainridge Park Casino. It would also meet the Route 140/Wheaton T Shuttle at the Mansfield MBTA station.

Franklin Area Bus

Northbound & Southbound





Franklin Area Bus

Northbound & Southbound

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route	System Average (Northwest)
Avg. Daily Weekday Ridership	33	34
Avg. Saturday Ridership	Incl. in	N/A
Sunday Ridership	N/A	N/A
Passengers/Hr	3.5	15.4
Saturday Passengers/Hr	N/A	N/A
Sunday Passengers/Hr	N/A	N/A

Financials	Route	System Average (Northwest)
Farebox Recovery	2.5%	8.2%
Weekday Subsidy per passenger	$22.37	$11.83
Saturday Subsidy per passenger	N/A	$11.83
Sunday Subsidy per passenger	N/A	N/A

Route Type: In-Town Shuttle, Northwest

Route Ranking: 29/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Fri.	Mon.-Sun.
Route Length (miles)	13.1	11.6 (15.7 w/ YMCA)
Route Run—Time	52 min.	46 min. (63 min)
Weekday Headway	61 min.	60 min. (65 min)
Saturday Headway	80 min.	60 min. (65 min)
Sunday Headway	N/A	60 min. (65 min)
Hours of Operations M-F	6:40 AM – 5:36 PM	6:40 AM – 9:36 PM
Hours of Operation Saturday	8:20 AM – 5:46 PM	8:20 AM – 5:46 PM
Hours of Operation Sunday	N/A	8:20 AM—5:46 PM

Route Alignment Changes:

This route would travel from Magnolia Heights to Village Plaza, serving the YMCA on deviation for select trips in the morning and midday. The route alignment would be Magnolia Heights—Central Park Terrace—MBTA Station to Franklin High School via Main Street to Village Plaza via Panther Way to Route 140.

Phase 1:

-Implement changes -$24,000

Phase 2:

-None

Phase 3:

-Night service +$123,000

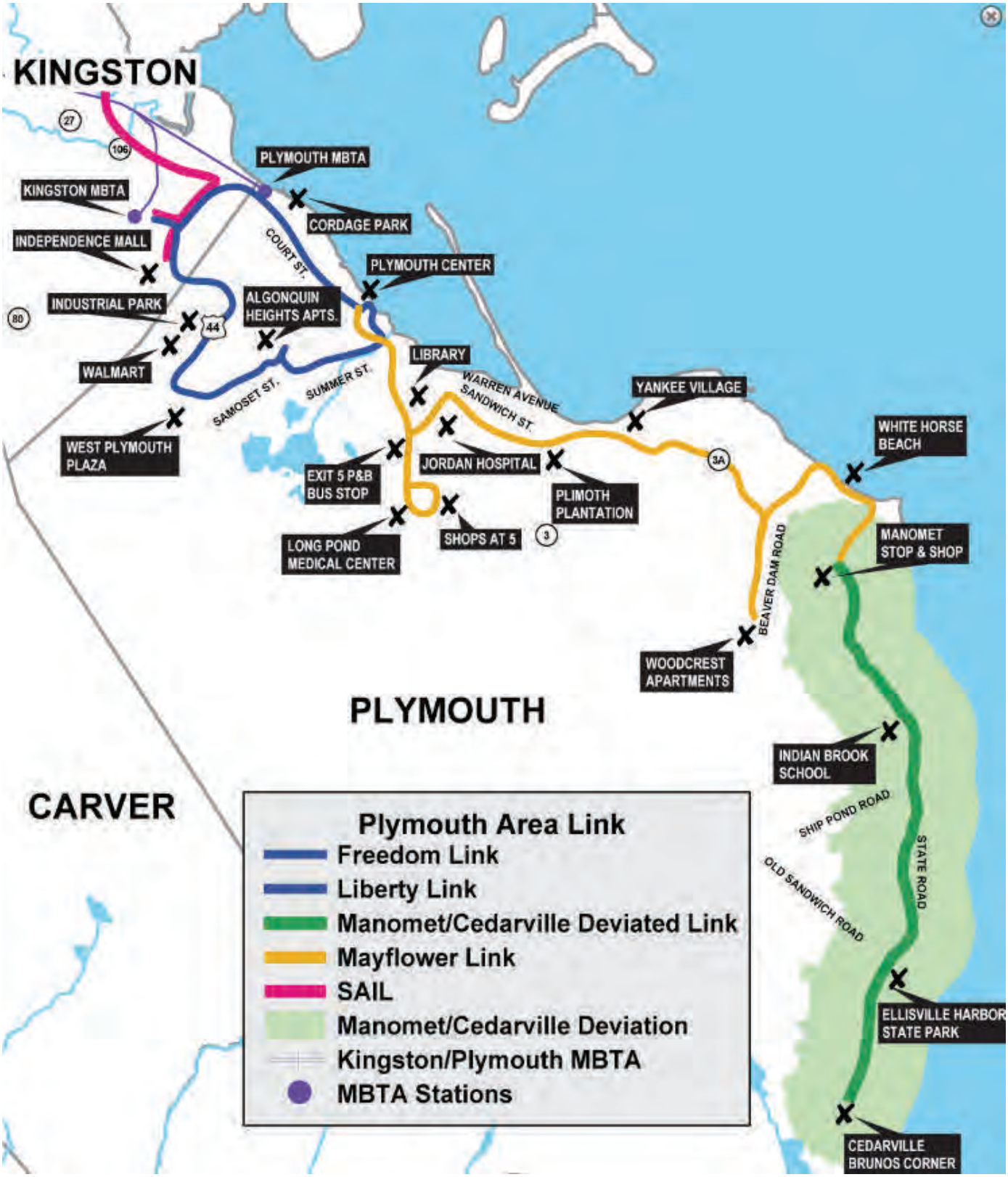
-Sunday service +$72,000

ADA Impact:

ADA service will be slightly reduced in the north western section of the route due to eliminating service on Oak St. and Pond St.

Other Notes:

The current Saturday routing to Market Basket would be eliminated dependent on the Bellingham North Shuttle proposed midday service. The Franklin proposed route would connect to the proposed Bellingham North Shuttle at Village Plaza which would serve Market Basket/Walmart.


KINGSTON
PLYMOUTH
CARVER
PLYMOUTH MBTA
KINGSTON MBTA
CORDAGE PARK
INDEPENDENCE MALL
COURT ST.
PLYMOUTH CENTER
INDUSTRIAL PARK
ALGONQUIN HEIGHTS APTS.
WALMART
SAMOSET ST.
SUMMER ST.
LIBRARY
WARREN AVENUE
SANDWICH ST.
YANKEE VILLAGE
WEST PLYMOUTH PLAZA
EXIT 5 P&B BUS STOP
JORDAN HOSPITAL
PLIMOTH PLANTATION
WHITE HORSE BEACH
LONG POND MEDICAL CENTER
SHOPS AT 5
BEAVER DAM ROAD
MANOMET STOP & SHOP
WOODCREST APARTMENTS
INDIAN BROOK SCHOOL
SHIP POND ROAD
OLD SANDWICH ROAD
STATE ROAD
ELLISVILLE HARBOR STATE PARK
CEDARVILLE BRUNOS CORNER
Plymouth Area Link
Freedom Link
Liberty Link
Manomet/Cedarville Deviated Link
Mayflower Link
SAIL
Manomet/Cedarville Deviation
Kingston/Plymouth MBTA
MBTA Stations

Freedom Link

Current Route Performance

Productivity	Freedom	System Average (Northeast)
Avg. Daily Weekday Ridership	109	94
Avg. Saturday Ridership	105	80
Sunday Ridership	N/A	N/A
Passengers/Hr	11.5	8.5
Saturday Passengers/Hr	13.7	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	Freedom	System Average (Northeast)
Farebox Recovery	6.8%	8.2%
Weekday Subsidy per passenger	$6.53	$10.93
Saturday Subsidy per passenger	$5.40	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Northeast

Route Ranking: 15/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon—Sat	Mon.-Sun.
Route Length	12.2 miles	12.2 miles
Route Run—Time	50 min.	80 min.
Weekday Headway	60 min.	60 min. (30 min. summer)
Saturday Headway	60 min.	60 min. (30 min. summer)
Sunday Headway	N/A	60 min. (30 min. summer)
Hours of Operations M-F	6:20 AM - 5:20 PM	6:20 AM – 9:20 PM
Hours of Operation Saturday	10:00 AM - 5:20 PM	10:00 AM - 5:20 PM
Hours of Operation Sunday	N/A	10:00 AM - 5:20 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

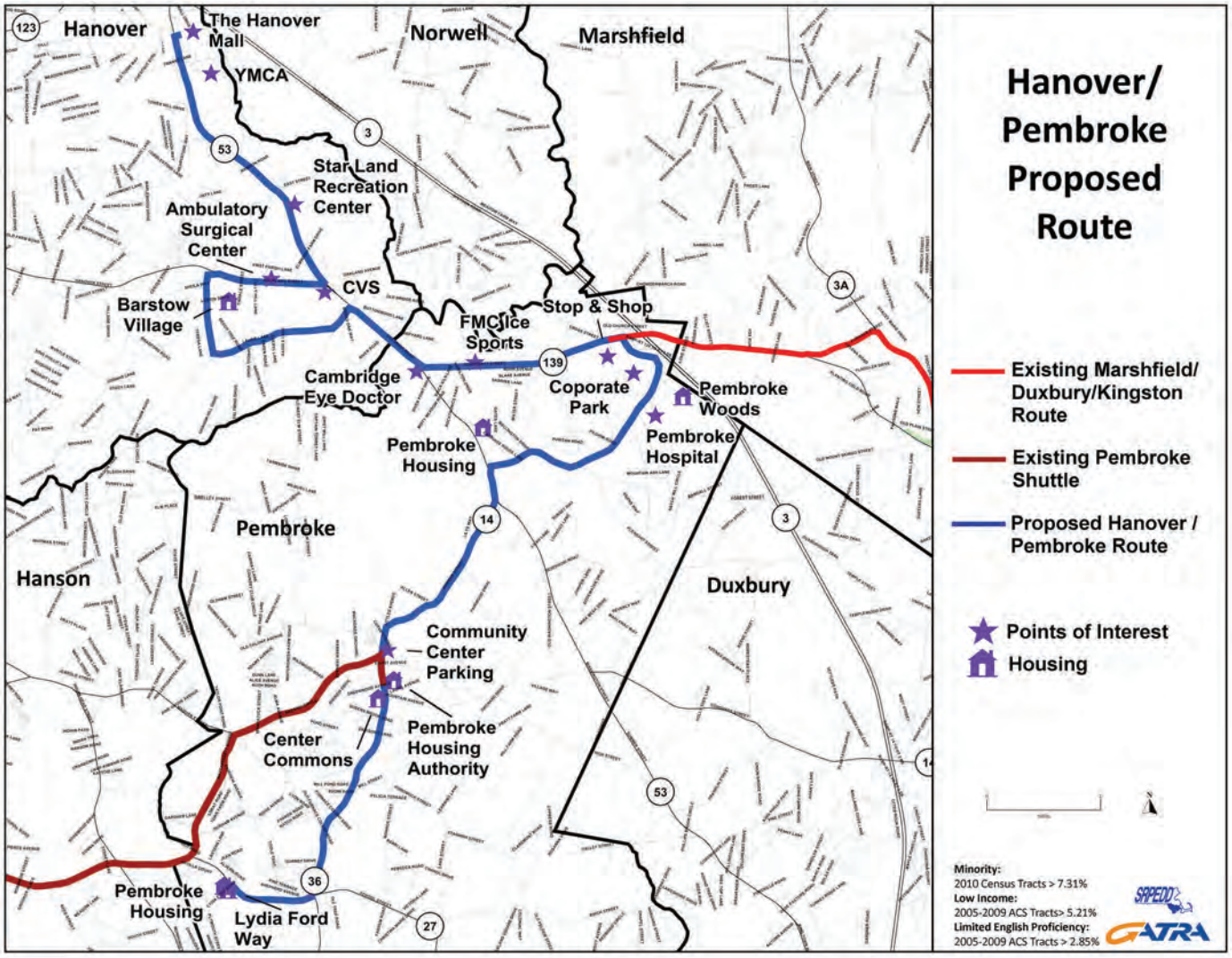
-Implement all changes +$214,000

ADA Impact:

There will be no impact to the ADA service.

Other Notes:

This route would meet the new Plainridge Route at the Plainridge Park Casino. It would also meet the Route 140/Wheaton T Shuttle at the Mansfield MBTA station.


Hanover
The Hanover Mall
YMCA
Norwell
Marshfield
Star Land Recreation Center
Ambulatory Surgical Center
CVS
Barstow Village
FMC Ice Sports
Stop & Shop
Cambridge Eye Doctor
Coporate Park
Pembroke Woods
Pembroke Hospital
Pembroke Housing
Pembroke
Hanson
Duxbury
Community Center Parking
Center Commons
Pembroke Housing Authority
Pembroke Housing
Lydia Ford Way
Hanover/ Pembroke Proposed Route
Existing Marshfield/ Duxbury/Kingston Route
Existing Pembroke Shuttle
Proposed Hanover / Pembroke Route
Points of Interest
Housing
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Hanover/Pembroke

Hanover Mall/Pembroke

Current Route Performance

Productivity	Route	System Average (Northeast)
Avg. Daily Weekday Ridership	N/A	94
Avg. Saturday Ridership	N/A	80
Sunday Ridership	N/A	N/A
Passengers/Hr	N/A	8.5
Saturday Passengers/Hr	N/A	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	Route	System Average (Northeast)
Farebox Recovery	N/A	8.2%
Weekday Subsidy per passenger	N/A	$10.93
Saturday Subsidy per passenger	N/A	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route

Route Ranking: N/A

Proposed Service Changes

	Current	Proposed
Days Operated	N/A	Mon.-Sun.
Route Length	N/A	26 miles
Route Run—Time	N/A	80 min.
Weekday Headway	N/A	90 min.
Saturday Headway	N/A	90 min.
Sunday Headway	N/A	90 min.
Hours of Operations M-F	N/A	6:00 AM – 6:00 PM
Hours of Operation Saturday	N/A	8:30 AM - 6:00 PM
Hours of Operation Sunday	N/A	8:30 AM - 6:00 PM

Route Alignment Changes:

A new route would be created between Pembroke Housing at Mayflower Court and the Hanover Mall. The route would travel via Route 27 to Center St. (Route 36) to the Pembroke Community Center Parking Lot – Center St. / Barker Street (Route 14) - Route 53 Washington St. to Pleasant St.— Oak St. to Route 139— Route 53 Columbia Rd. to Broadway— Spring St.— Hanover St.— back to Route 53 to the Hanover Mall.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Establish permanent route +$345,000

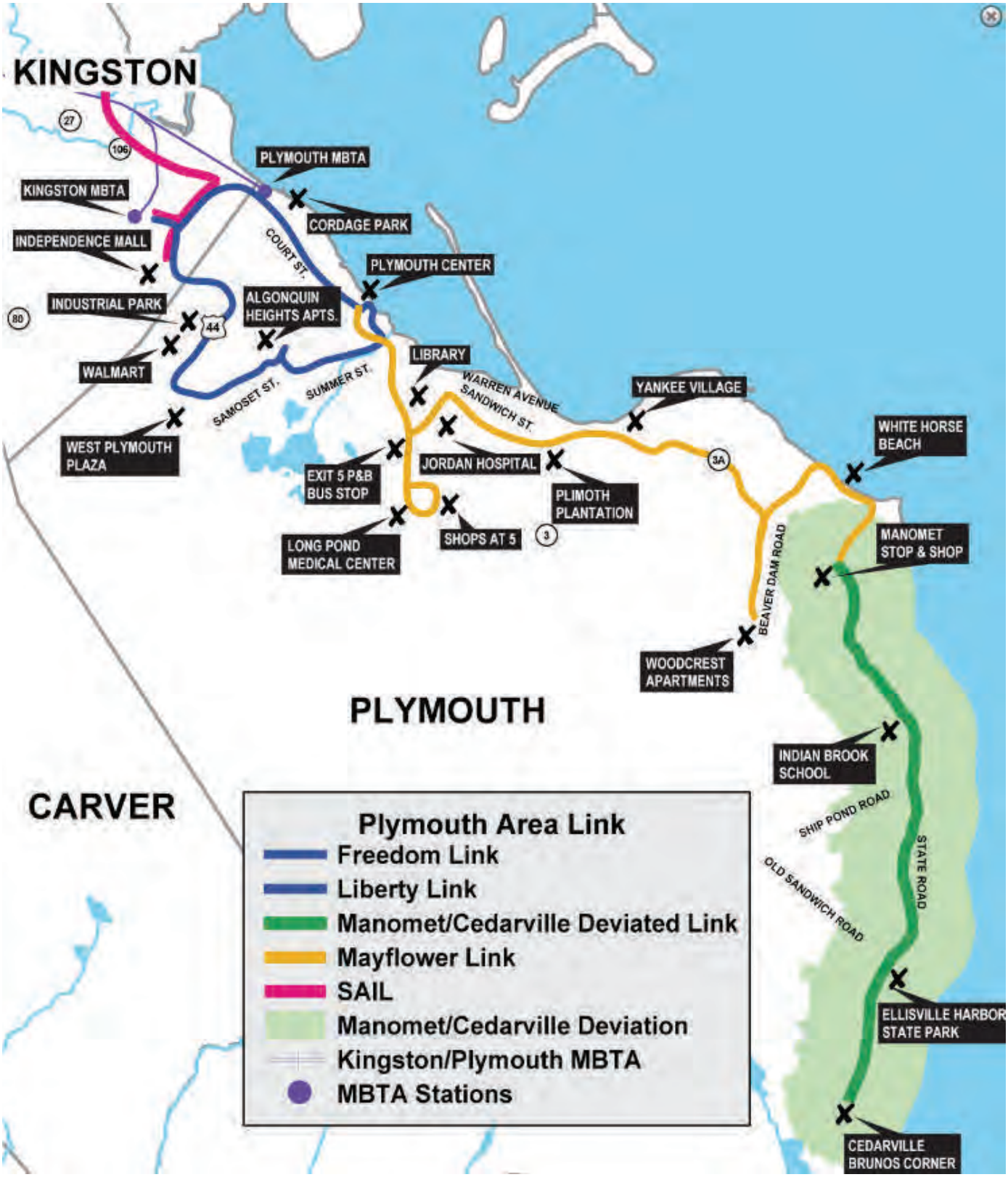
ADA Impact:

There is currently no ADA service in Scituate. New ADA service would need to be implemented.

Other Notes:

Locations served include Pembroke Housing, Pembroke Hospital, Stop & Shop, Corporate Park, FMC Ice Sports, Barstow Village, Star Land Recreation Center, Hanover YMCA and the Hanover Mall.

This new route would connect with the Pembroke Shuttle at the Community Center Parking Lot and would also connect with the Marshfield/Duxbury/ Kingston Route at the Pembroke Stop & Shop.


KINGSTON
PLYMOUTH
CARVER
PLYMOUTH MBTA
KINGSTON MBTA
CORDAGE PARK
INDEPENDENCE MALL
COURT ST.
PLYMOUTH CENTER
INDUSTRIAL PARK
ALGONQUIN HEIGHTS APTS.
WALMART
SAMOSET ST.
SUMMER ST.
LIBRARY
WARREN AVENUE
SANDWICH ST.
YANKEE VILLAGE
WEST PLYMOUTH PLAZA
EXIT 5 P&B BUS STOP
JORDAN HOSPITAL
PLIMOTH PLANTATION
WHITE HORSE BEACH
LONG POND MEDICAL CENTER
SHOPS AT 5
BEAVER DAM ROAD
MANOMET STOP & SHOP
WOODCREST APARTMENTS
INDIAN BROOK SCHOOL
SHIP POND ROAD
OLD SANDWICH ROAD
STATE ROAD
ELLISVILLE HARBOR STATE PARK
CEDARVILLE BRUNOS CORNER
Plymouth Area Link
Freedom Link
Liberty Link
Manomet/Cedarville Deviated Link
Mayflower Link
SAIL
Manomet/Cedarville Deviation
Kingston/Plymouth MBTA
MBTA Stations

Liberty Link

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Liberty	System Average (Northeast)
Avg. Daily Weekday Ridership	146	94
Avg. Saturday Ridership	60	80
Sunday Ridership	N/A	N/A
Passengers/Hr	13.50	8.5
Saturday Passengers/Hr	12.3	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	Liberty	System Average (Northeast)
Farebox Recovery	8%	8.2%
Weekday Subsidy per passenger	$5.48	$10.93
Saturday Subsidy per passenger	$6.07	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Northeast

Route Ranking: 9/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon—Sat	Mon.-Sun.
Route Length	12.2 miles	12.2 miles
Route Run—Time	50 min.	50 min.
Weekday Headway	60 min.	60 min. (30 min. summer)
Saturday Headway	60 min.	60 min. (30 min. summer)
Sunday Headway	N/A	60 min. (30 min. summer)
Hours of Operations M-F	6:25 AM - 6:25 PM	6:25 AM – 10:25 PM
Hours of Operation Saturday	8:25 AM - 6:25 PM	8:25 AM - 6:25 PM
Hours of Operation Sunday	N/A	8:25 AM - 6:25 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement all changes +$219,000

ADA Impact:

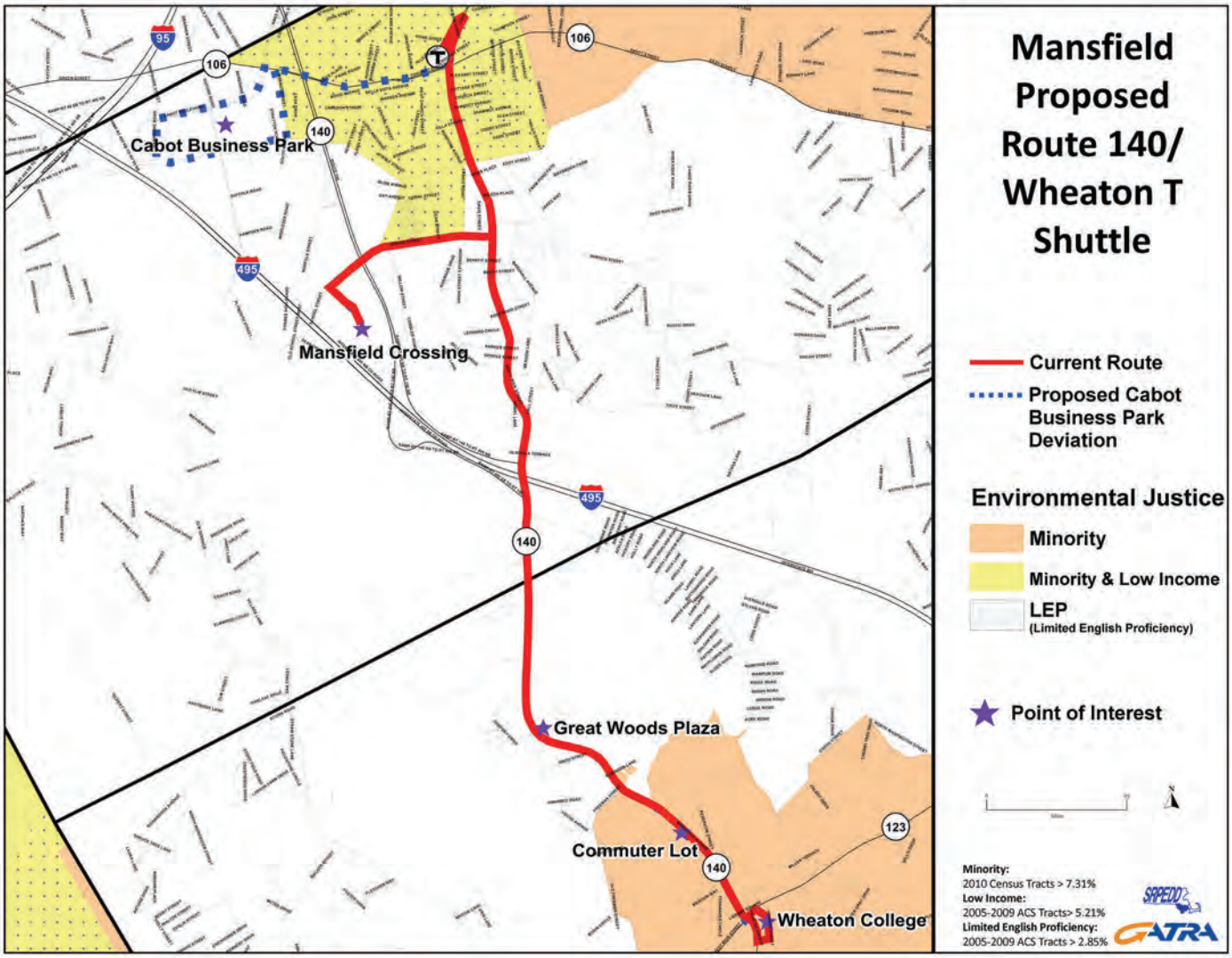
There will be no impact to the ADA service.

Other Notes:

This route would meet the new Plainridge Route at the Plainridge Park Casino. It would also meet the Route 140/Wheaton T Shuttle at the Mansfield MBTA station.

Route 140

Route 140/Wheaton T Shuttle



Route 140

Route 140/Wheaton T Shuttle

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 140	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	82	127
Avg. Saturday Ridership	131	83
Sunday Ridership	Included in Saturday	N/A
Passengers/Hr	6.2	12.0
Saturday Passengers/Hr	6.3	11.2
Sunday Passengers/Hr	Included in Saturday	N/A

Financials	Route 140	System Average (Attleboro/Taunton)
Farebox Recovery	1.6%	8.2%
Weekday Subsidy per passenger	$12.70	$7.01
Saturday Subsidy per passenger	$12.48	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attleboro/Taunton

Route Ranking: 23/30

Proposed Service Changes

	Current	Proposed (with Cabot)
Days Operated	Mon.-Sun.	Mon.-Sun.
Route Length	15.6 miles	17.4 miles
Route Run—Time	50 min.	58 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	60 min.	60 min.
Hours of Operations M-F	6:15 AM – 11:38 PM	6:15 AM – 11:38 PM
Hours of Operation Saturday	8:30 AM - 12:19 AM	8:30 AM - 12:19 AM
Hours of Operation Sunday	11:50 AM - 9:54 PM	11:50 AM - 9:54 PM

Route Alignment Changes:

Route 140/Wheaton Shuttle would remain unchanged with the exception of adding deviation service to the Cabot Business Park from Mansfield MBTA to Forbes Blvd. via Chauncey Street (Route 106). The deviation would travel from Forbes Blvd. to Hampshire Road to West Street to Walnut Street and return back onto Chauncey Street (Route 106).

Phase 1:

-Deviation to Cabot Business Park $0

Phase 2:

-None

Phase 3:

-Implement year round Sunday service +$31,000

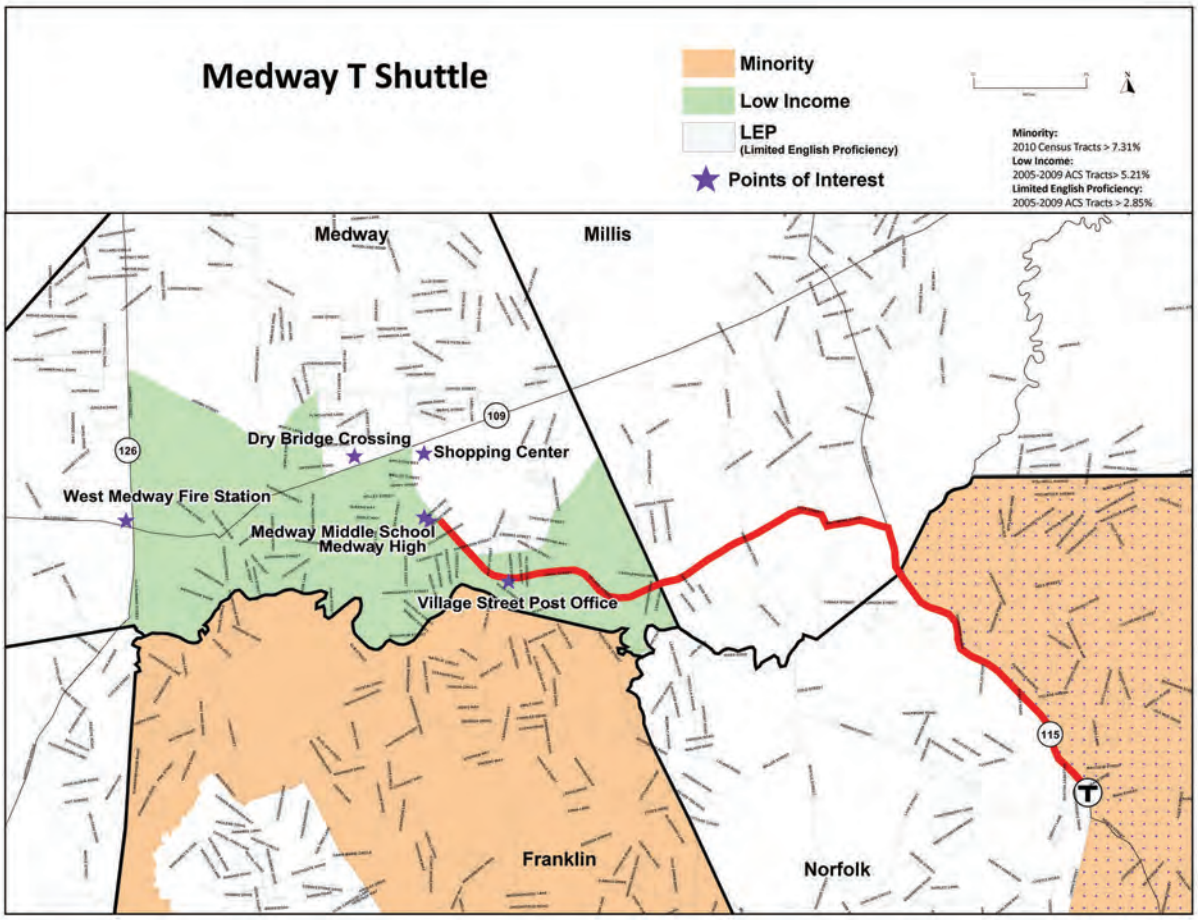
ADA Impact:

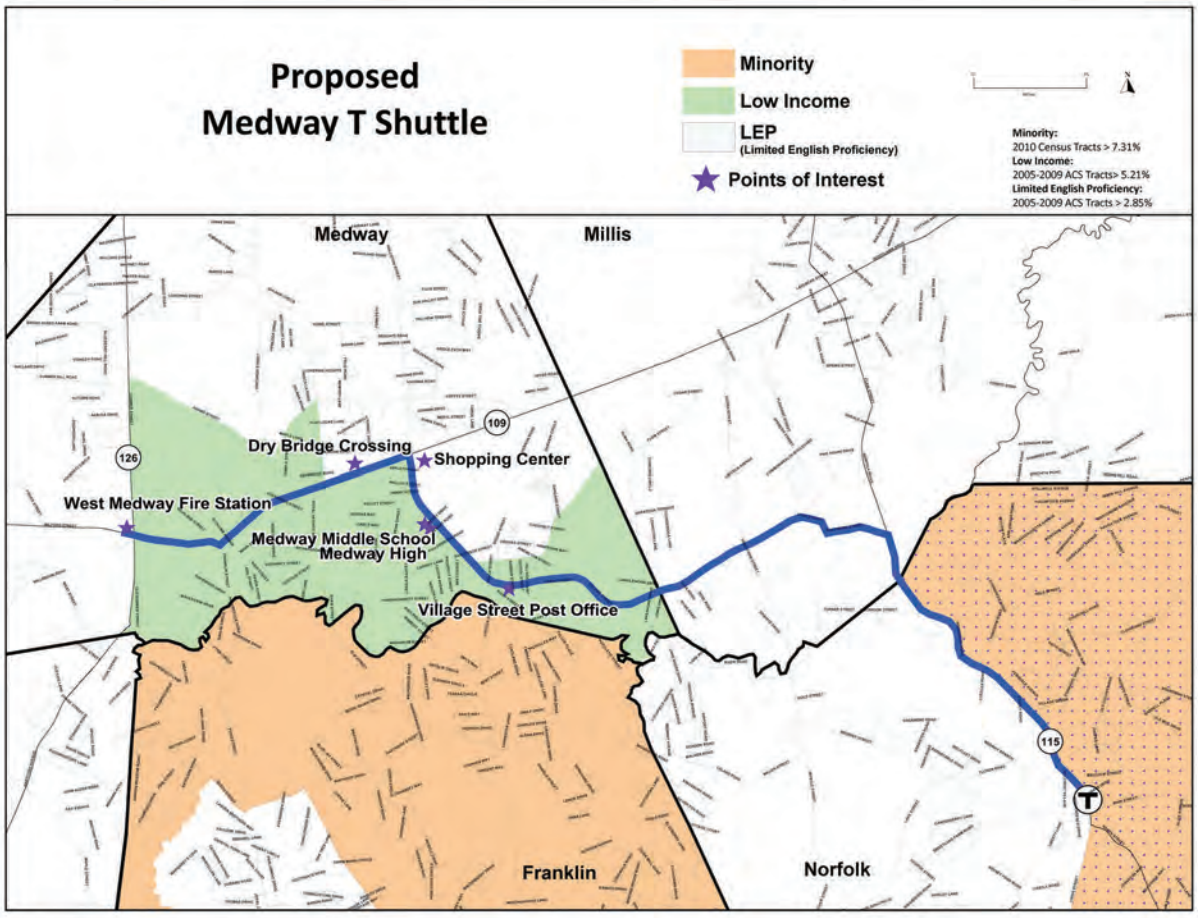
There will be no impact on ADA service.

Other Notes:

Current Sunday service is only in operation when Wheaton College is in session. Year round service is proposed for the route on Sunday.

Service to Cabot Business Park would be on deviation only in the early morning and from 4PM-6PM. Trips would either serve Cabot Business Park or Mansfield Crossing.


Medway T Shuttle
Minority
Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Medway
Millis
Dry Bridge Crossing
Shopping Center
West Medway Fire Station
Medway Middle School
Medway High
Village Street Post Office
Franklin
Norfolk
109
126
115
T


Proposed
Medway T Shuttle
Minority
Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Medway
Millis
Dry Bridge Crossing
Shopping Center
West Medway Fire Station
Medway Middle School
Medway High
Village Street Post Office
Franklin
Norfolk
109
126
115
T

Medway T Shuttle 2

Medway T Shuttle

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route	System Average (Northwest)
Avg. Daily Weekday Ridership	51	34
Avg. Saturday Ridership	N/A	N/A
Sunday Ridership	N/A	N/A
Passengers/Hr	36.4	15.4
Saturday Passengers/Hr	N/A	N/A
Sunday Passengers/Hr	N/A	N/A

Financials	Route	System Average (Northwest)
Farebox Recovery	41%	8.2%
Weekday Subsidy per passenger	$1.30	$11.83
Saturday Subsidy per passenger	N/A	$11.83
Sunday Subsidy per passenger	N/A	N/A

Route Type: Commuter Shuttle, Northwest

Route Ranking: N/A

Proposed Service Changes

	Current (Medway T Shuttle 1)	Proposed (Medway T Shuttle 12
Days Operated	N/A	Mon.-Fri.
Route Length	N/A	8.1 miles
Route Run—Time	N/A	40 min.
Weekday Headway	N/A.	45 min.
Saturday Headway	N/A	N/A
Sunday Headway	N/A	N/A
Hours of Operations M-F	N/A	5:47 AM – 7:57 AM & 4:50 PM – 8:10 PM
Hours of Operation Saturday	N/A	N/A
Hours of Operation Sunday	N/A	N/A

Route Alignment Changes:

Create an additional shuttle beginning from the West Medway Fire Station (Route 109 and Summer St.)—east on Route 109 to the shopping center—right on Holliston Street to Medway Middle School—Village Street to Route 115 South to the Norfolk MBTA station.

Phase 1:

-None

Phase 2:

-Cost to implement +$150,000

Phase 3:

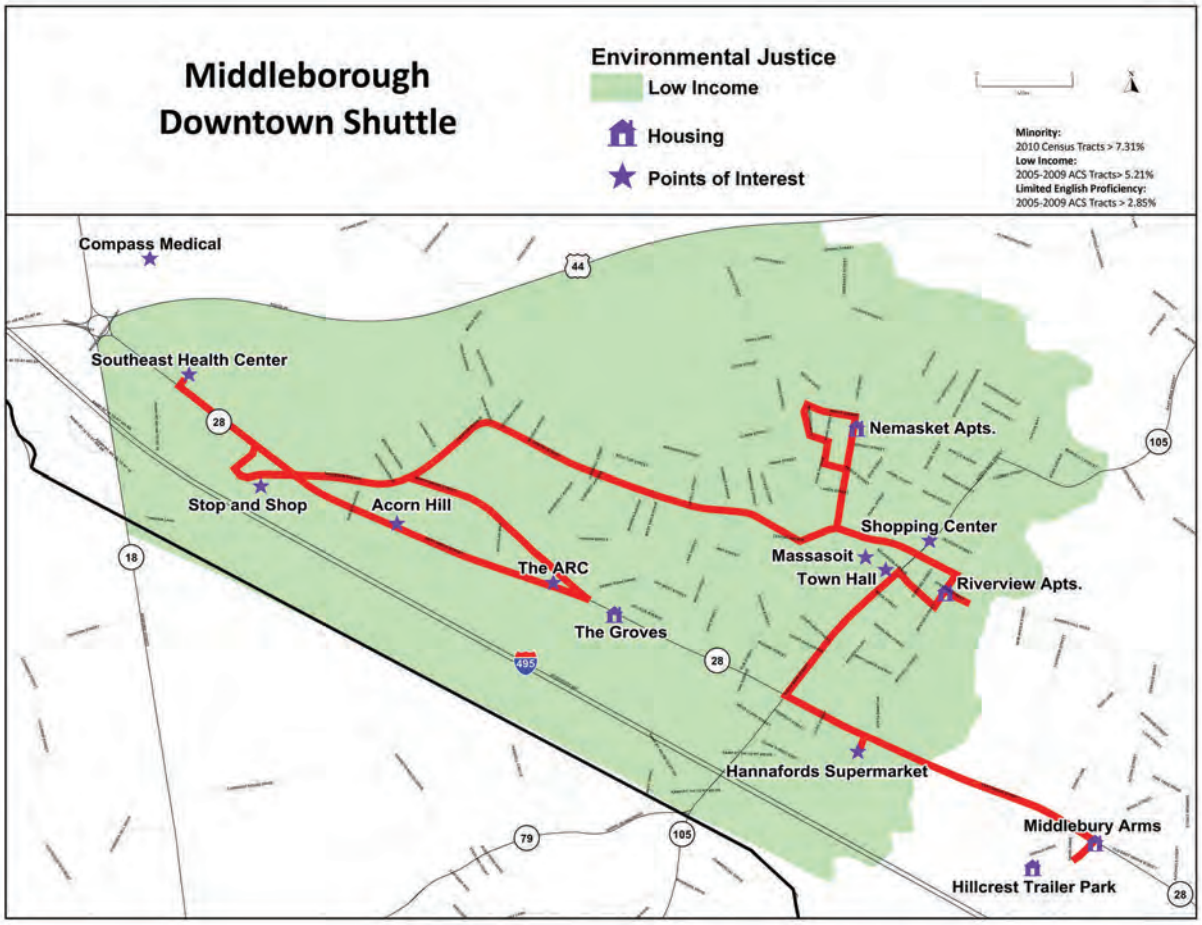
-None

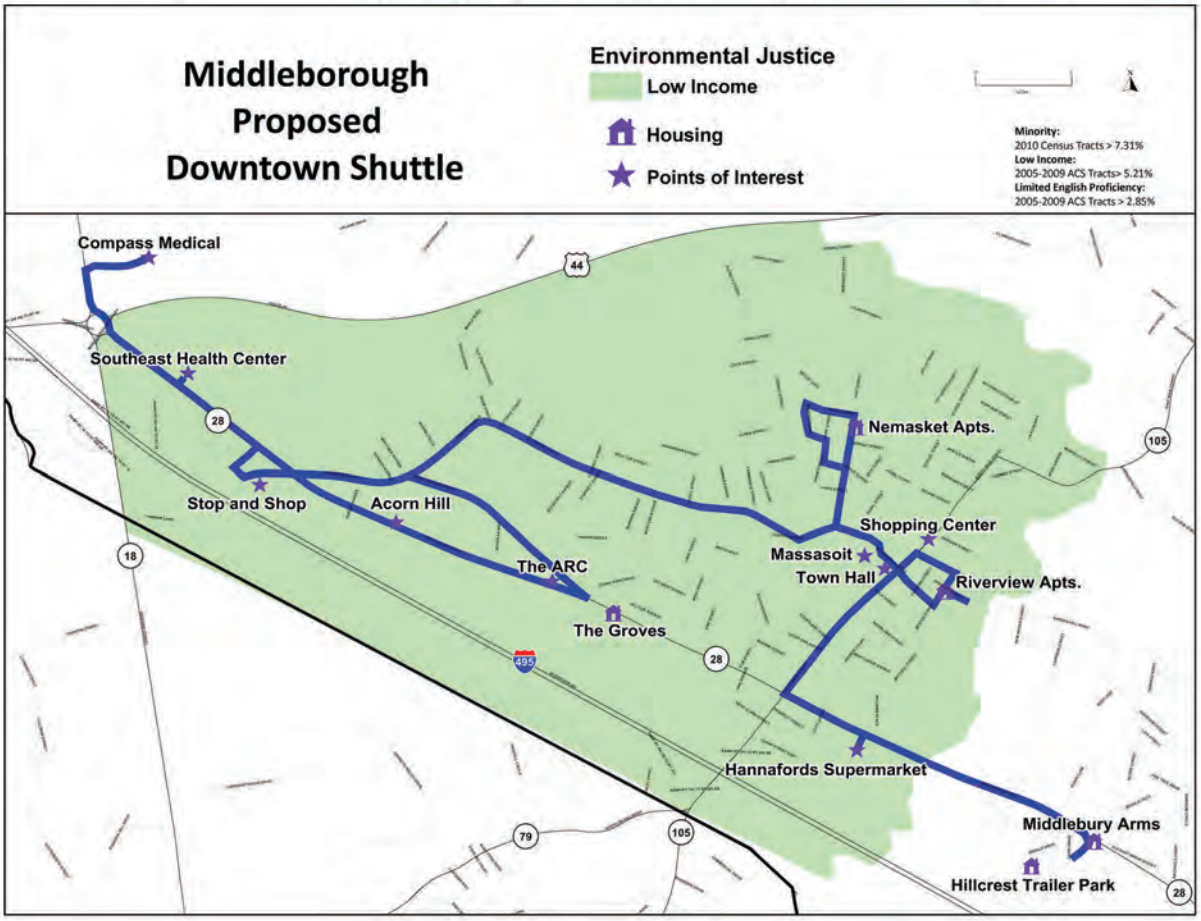
ADA Impact:

There will be no impact on ADA service.

Other Notes:

This new route would duplicate service from the Medway Middle School to the MBTA station. However, the current shuttle operates at, or near, capacity and future growth will require additional passenger capacity. The current Medway T Shuttle 1 will not change; the Medway T Shuttle 2 is an additional vehicle and extension.


Middleborough
Downtown Shuttle
Environmental Justice
Low Income
Housing
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Compass Medical
Southeast Health Center
Stop and Shop
Acorn Hill
The ARC
The Groves
Nemasket Apts.
Shopping Center
Massasoit
Town Hall
Riverview Apts.
Hannafords Supermarket
Middlebury Arms
Hillcrest Trailer Park
44
28
18
495
105
79


Middleborough
Proposed
Downtown Shuttle
Environmental Justice
Low Income
Housing
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Compass Medical
Southeast Health Center
Stop and Shop
Acorn Hill
The ARC
The Groves
Nemasket Apts.
Shopping Center
Massasoit
Town Hall
Riverview Apts.
Hannafords Supermarket
Middlebury Arms
Hillcrest Trailer Park
44
28
18
495
105
79

Middleborough

Downtown Middleborough Shuttle

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	MDS	System Average (Southeast)
Avg. Daily Weekday Ridership	46	64
Avg. Saturday Ridership	N/A	64
Sunday Ridership	N/A	N/A
Passengers/Hr	5.11	9.7
Saturday Passengers/Hr	N/A	10.6
Sunday Passengers/Hr	N/A	N/A

Financials	MDS	System Average
Farebox Recovery	3.3%	8.2%
Weekday Subsidy per passenger	$15.22	$11.30
Saturday Subsidy per passenger	N/A	$8.14
Sunday Subsidy per passenger	N/A	N/A

Route Type: In-Town Shuttle, Southeast

Route Ranking: 26/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Fri.	Mon.-Fri.
Route Length	13.3 miles	15 miles
Route Run—Time	60 min.	70 min.
Weekday Headway	60 min.	75 min.
Saturday Headway	N/A	N/A
Sunday Headway	N/A	N/A
Hours of Operations M-F	8:00 AM – 5:00 PM	8:00 AM – 5:00 PM
Hours of Operation Saturday	N/A	N/A
Hours of Operation Sunday	N/A	N/A

Route Alignment Changes:

This shuttle will largely remain the same with the exception of better service to Massasoit Community College as well as new service to Compass Medical. The new alignment to serve Massasoit would be Wareham St.—South Main St.—Nickerson Ave.—Union to Center Street and continue as the regular route. The new alignment to Compass Medical would be via Route 28 and Route 18.

Phase 1:

-Route realignment +$46,000

Phase 2:

-None

Phase 3:

-None

ADA Impact:

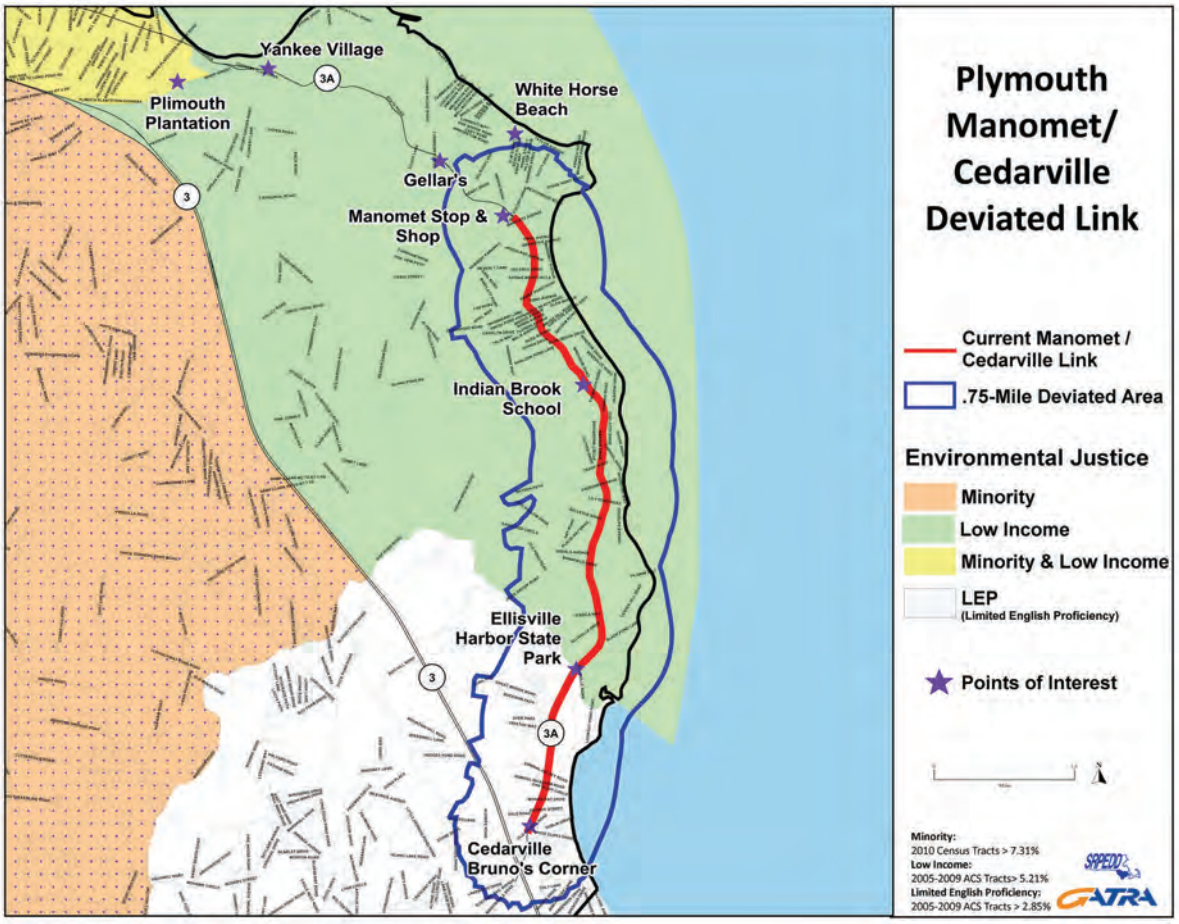
There will be minimal impact on ADA service. Due to new service to Compass Medical, a small area will have to be included in GATRA's current ADA service.

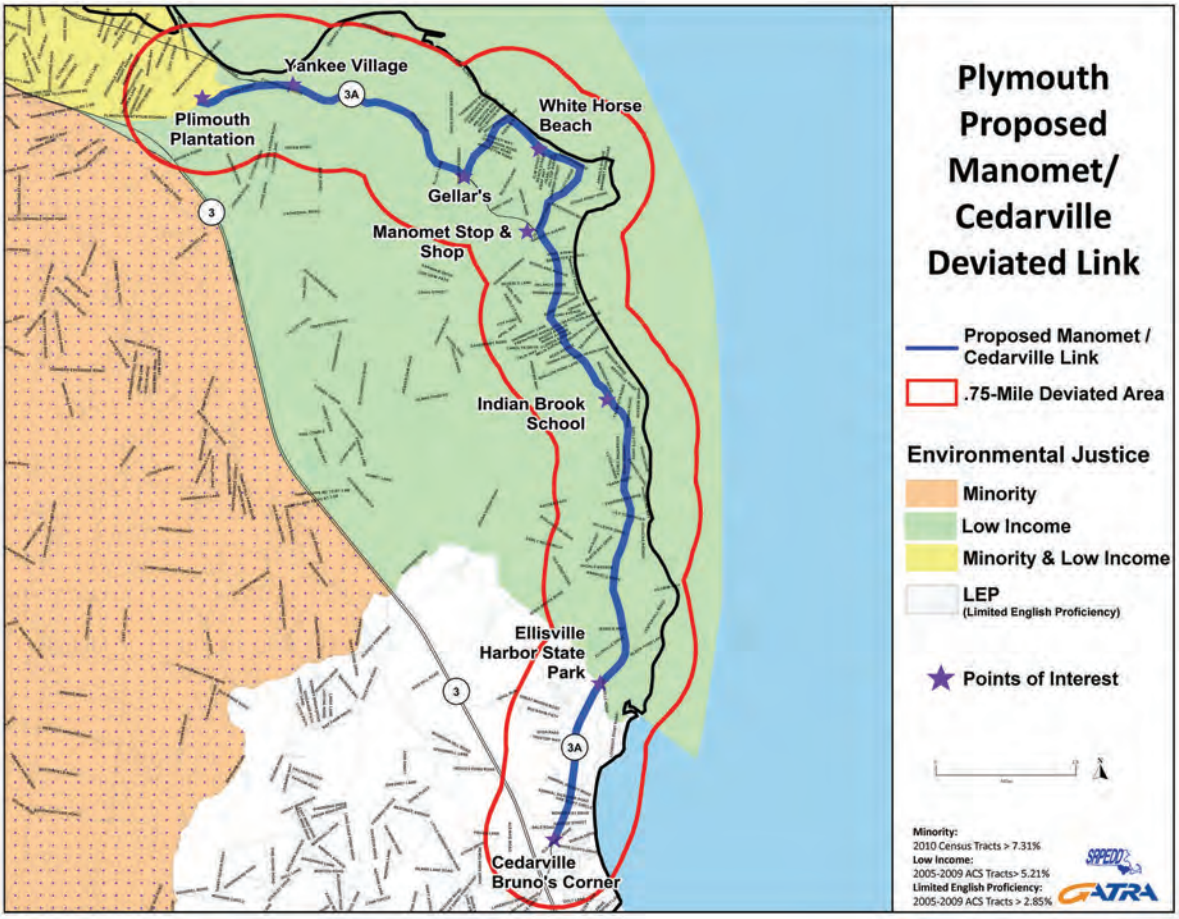
Other Notes:

Alignments to the route provide new service to Compass Medical and enhanced service to the community college.

Manomet/Cedarville

Manomet/Cedarville Deviated Link





Manomet/Cedarville

Manomet/Cedarville Deviated Link

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	M/C	System Average (Northeast)
Avg. Daily Weekday Ridership	28	94
Avg. Saturday Ridership	23	80
Sunday Ridership	N/A	N/A
Passengers/Hr	4.2	8.5
Saturday Passengers/Hr	4.3	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	M/C	System Average (Northeast)
Farebox Recovery	2.5%	8.2%
Weekday Subsidy per passenger	$18.68	$10.93
Saturday Subsidy per passenger	$18.18	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: Deviated Route, Northeast

Route Ranking: 27/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	14.9 miles	27 miles
Route Run—Time	40 min.	70 min.
Weekday Headway	60 min.	90 min.
Saturday Headway	60 min.	90 min.
Sunday Headway	N/A	90 min.
Hours of Operations M-F	7:30 AM – 5:20 PM	7:30 AM – 9:20 PM
Hours of Operation Saturday	10:00 AM – 5:20 PM	10:00 AM – 5:20 PM
Hours of Operation Sunday	N/A	10:00 AM – 5:20 PM

Route Alignment Changes:

A new deviated route would be created that encompasses the Manomet/ Cedarville Link and a portion of the Mayflower Link. This route would travel from Bruno's Corner in Cedarville to White Horse Beach and Plimoth Plantation via Route 3A.

Phase 1:

-Implement deviation changes $144,000

Phase 2:

-None

Phase 3:

-Implement Sunday service +$60,000

-Implement night service +$123,000

-Improve summer service +$28,000

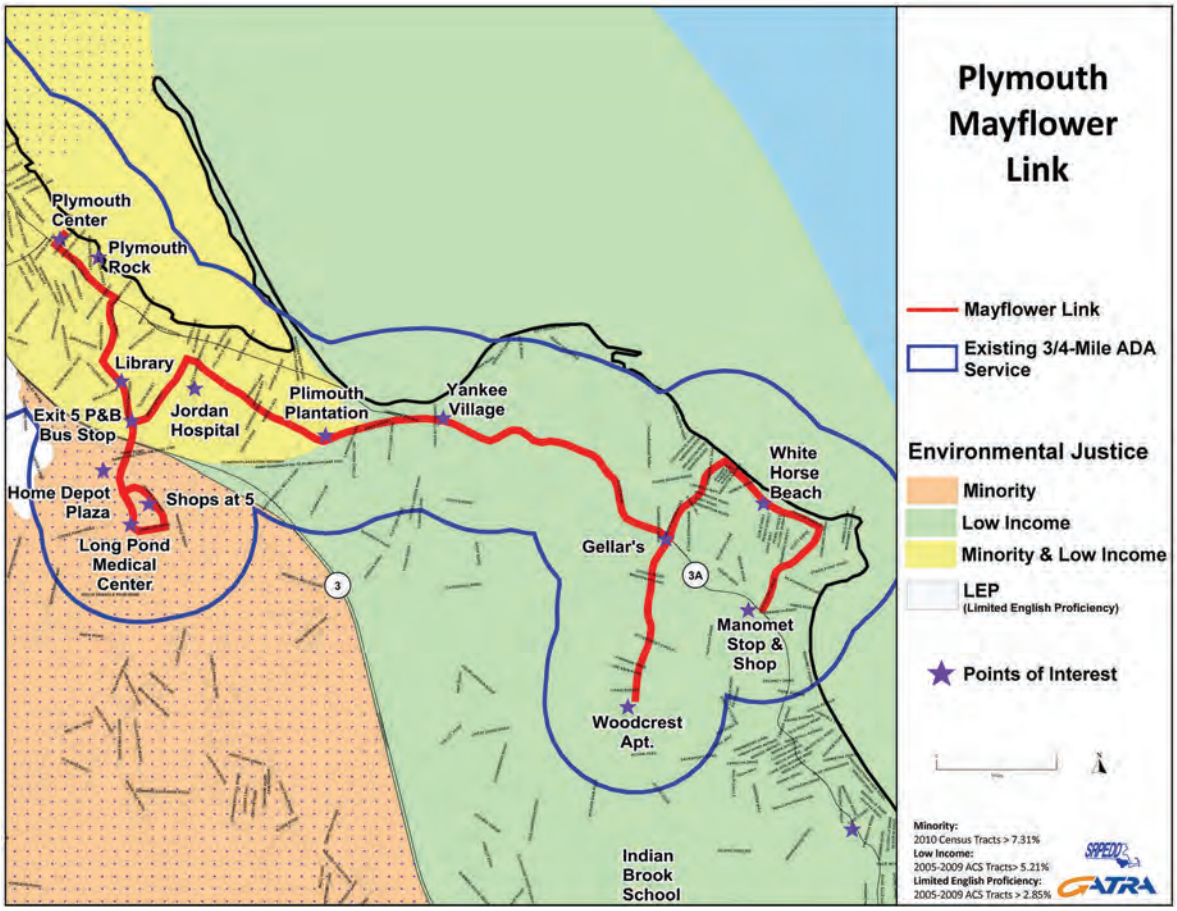
ADA Impact:

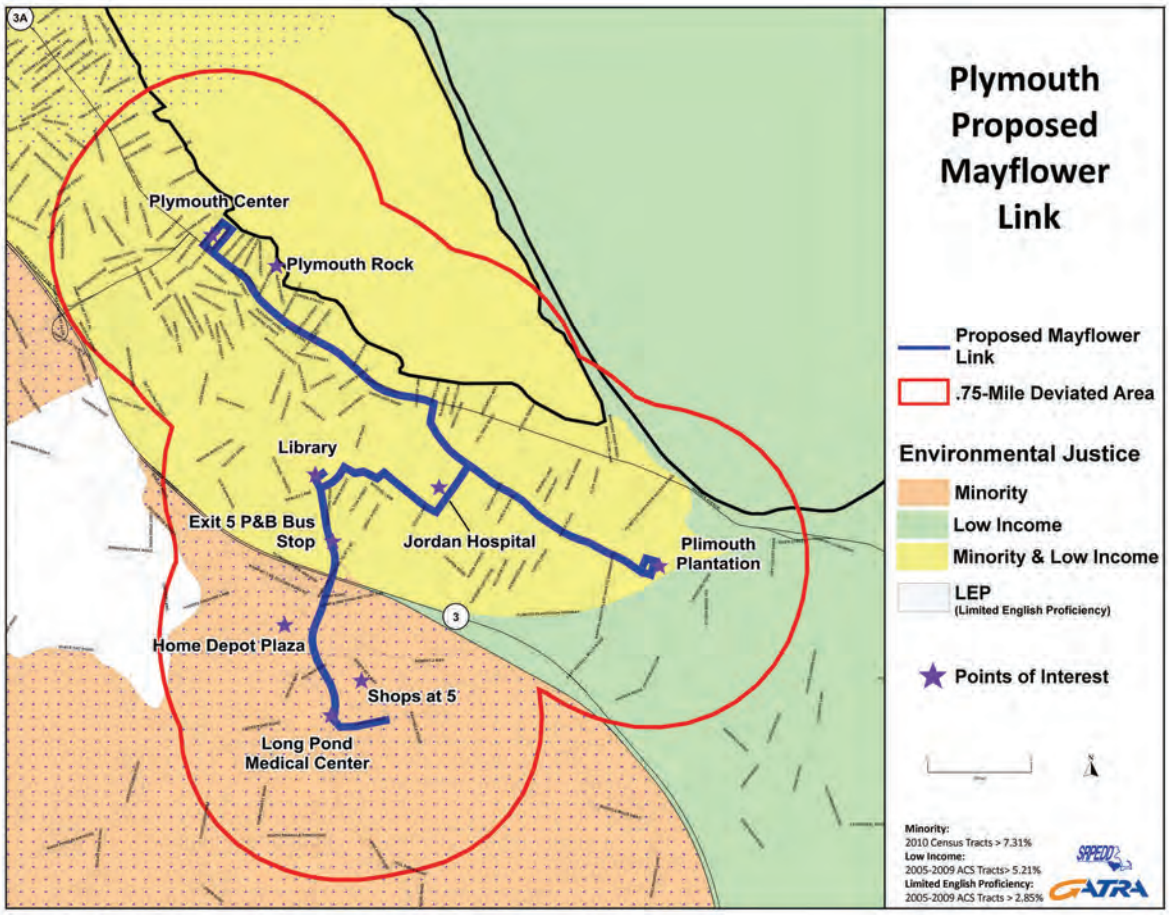
Current ADA service for the Mayflower Link would be eliminated due to this route being a deviated route.

Other Notes:

This route would deviate 3/4 of a mile from the route.

This route would meet the new, shorter Mayflower Link at Plimoth Plantation.


Plymouth Mayflower Link
Plymouth Center
Plymouth Rock
Library
Jordan Hospital
Plimouth Plantation
Yankee Village
Exit 5 P&B Bus Stop
Home Depot Plaza
Shops at 5
Long Pond Medical Center
White Horse Beach
Gellar's
Manomet Stop & Shop
Woodcrest Apt.
Indian Brook School
3
3A
Mayflower Link
Existing 3/4-Mile ADA Service
Environmental Justice
Minority
Low Income
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%


Plymouth Proposed Mayflower Link
Plymouth Center
Plymouth Rock
Library
Exit 5 P&B Bus Stop
Jordan Hospital
Plimouth Plantation
Home Depot Plaza
Shops at 5
Long Pond Medical Center
3
3A
Proposed Mayflower Link
.75-Mile Deviated Area
Environmental Justice
Minority
Low Income
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Current Route Performance

Productivity	Mayflower	System Average (Northeast)
Avg. Daily Weekday Ridership	124	94
Avg. Saturday Ridership	93	80
Sunday Ridership	N/A	N/A
Passengers/Hr	7.4	8.5
Saturday Passengers/Hr	7.0	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	Mayflower	System Average (Northeast)
Farebox Recovery	4.4%	8.2%
Weekday Subsidy per passenger	$10.34	$10.93
Saturday Subsidy per passenger	$11.06	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Northeast

Route Ranking: 18/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	31.2 miles	16.4 miles
Route Run—Time	100 min.	45 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	7:00 AM – 5:50 PM	7:00 AM – 9:50 PM
Hours of Operation Saturday	10:00 AM – 5:50 PM	10:00 AM – 5:50 PM
Hours of Operation Sunday	N/A	10:00 AM – 5:50 PM

Route Alignment Changes:

A new route would be developed and travel from Plymouth Center to Plimoth Plantation via Route 3A and Sandwich Street. From Plimoth Plantation it would travel to Shops at Five via Obery Street and Long Pond Road.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement all changes $271,000

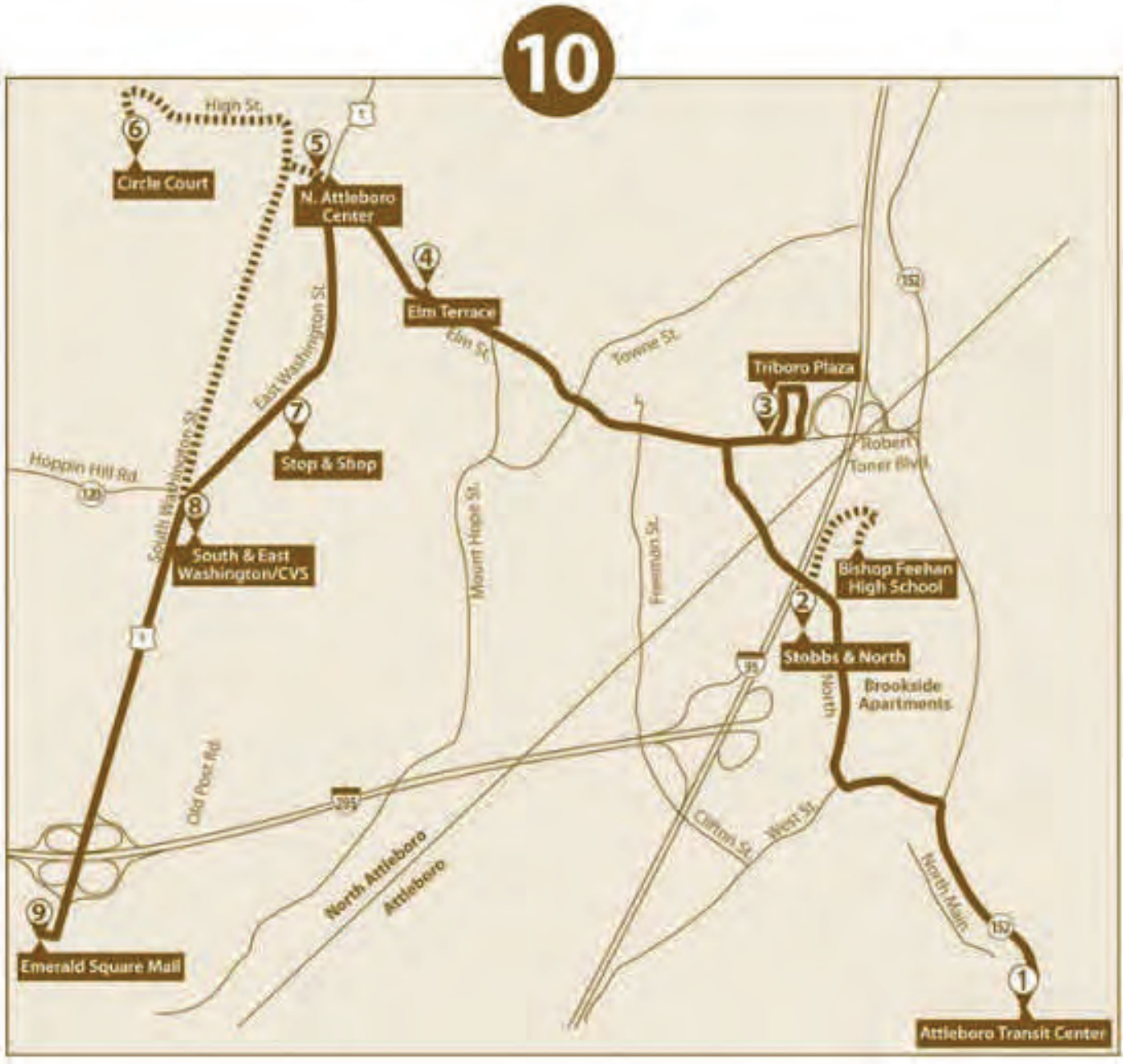
ADA Impact:

Current ADA service for the Mayflower Link would be eliminated due to this route being a deviated route.

Other Notes:

This route would deviate 3/4 of a mile from the route.

This route would meet the new Cedarville Link at Plimoth Plantation and also serve Beth Israel Deaconess Hospital-Plymouth.


10
High St.
Circle Court
N. Attleboro Center
Elm Terrace
Elm St.
Yonnie St.
Triboro Plaza
Robert Toner Blvd.
East Washington St.
Stop & Shop
Hoppin Hill Rd.
South Washington St.
South & East Washington/CVS
Mount Hope St.
Freeman St.
Bishop Feehan High School
Stobbs & North
Brookside Apartments
North
Old Post Rd.
Clifton St.
West St.
North Main
North Attleboro
Attleboro
Emerald Square Mall
Attleboro Transit Center

Route 10

Attleboro/No. Attleboro

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 10	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	213	127
Avg. Saturday Ridership	133	83
Sunday Ridership	N/A	N/A
Passengers/Hr	17.29	12.03
Saturday Passengers/Hr	7.95	11.17
Sunday Passengers/Hr	N/A	N/A

Financials	Route 10	System Average (Attleboro/Taunton)
Farebox Recovery	15%	8.2%
Weekday Subsidy per passenger	$3.95	$7.01
Saturday Subsidy per passenger	$4.11	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attelboro/Taunton

Route Ranking: 3/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon—Sat	Mon.-Sun.
Route Length	20.1 miles	20.1 miles
Route Run—Time	60 min.	60 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	5:30 AM - 6:50 PM	5:30 AM – 10:50 PM
Hours of Operation Saturday	9:30 AM - 5:00 PM	9:30 AM - 5:00 PM
Hours of Operation Sunday	N/A	9:30 AM - 5:00 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement Sunday service +$75,000

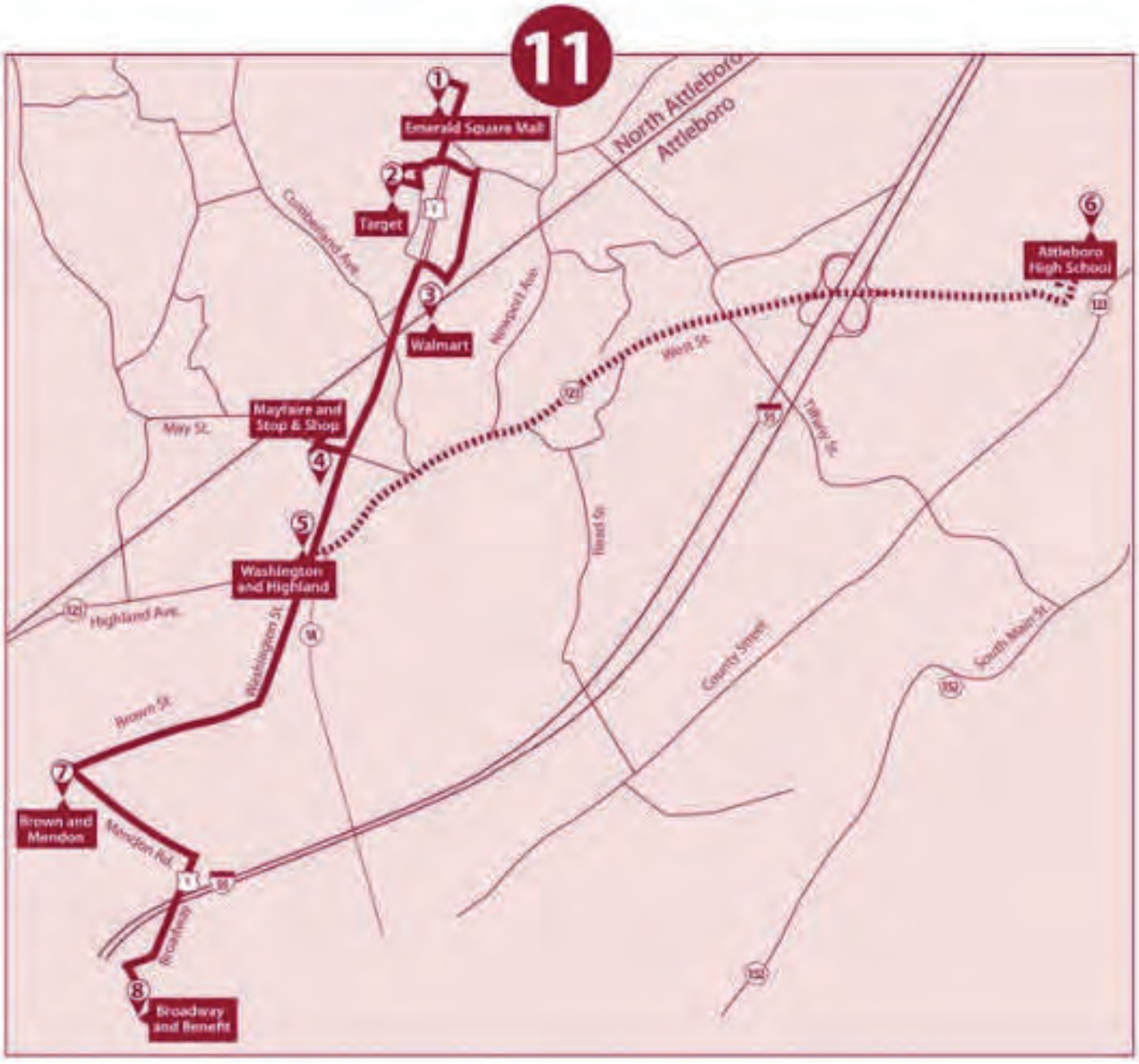
-Implement night service +$123,000

ADA Impact:

There is currently no ADA service in Foxborough. With the creation of this route ADA service would need to be implemented.

Other Notes:

Weekday service hours would be extended later in the evening and service would be added on Sundays.


11
1 Emerald Square Mall
2 Target
3 Walmart
4 Mayflower and Stop & Shop
5 Washington and Highland
6 Attleboro High School
7 Brown and Mendon
8 Broadway and Benefit
North Attleboro
Attleboro
Cumberland Ave
Newport Ave
West St
May St
Highland Ave
Washington St
Brown St
Mendon Rd
Broadway
Hood St
Tiffany St
County Street
South Main St

Route 11

South Attleboro Connector

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 11	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	128	127
Avg. Saturday Ridership	106	83
Sunday Ridership	N/A	N/A
Passengers/Hr	13.43	12.03
Saturday Passengers/Hr	18.93	11.17
Sunday Passengers/Hr	N/A	N/A

Financials	Route 11	System Average (Attleboro/Taunton)
Farebox Recovery	11.7%	8.2%
Weekday Subsidy per passenger	$5.29	$7.01
Saturday Subsidy per passenger	$3.55	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attelboro/Taunton

Route Ranking: 10/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon—Sat	Mon.-Sun.
Route Length	11.3 miles	11.3 miles
Route Run—Time	42 min.	42 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	5:40 AM - 7:20 PM	5:40 AM – 11:20 PM
Hours of Operation Saturday	9:10 AM - 4:52 PM	9:10 AM - 4:52 PM
Hours of Operation Sunday	N/A	9:10 AM - 4:52 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement Sunday service +$53,000

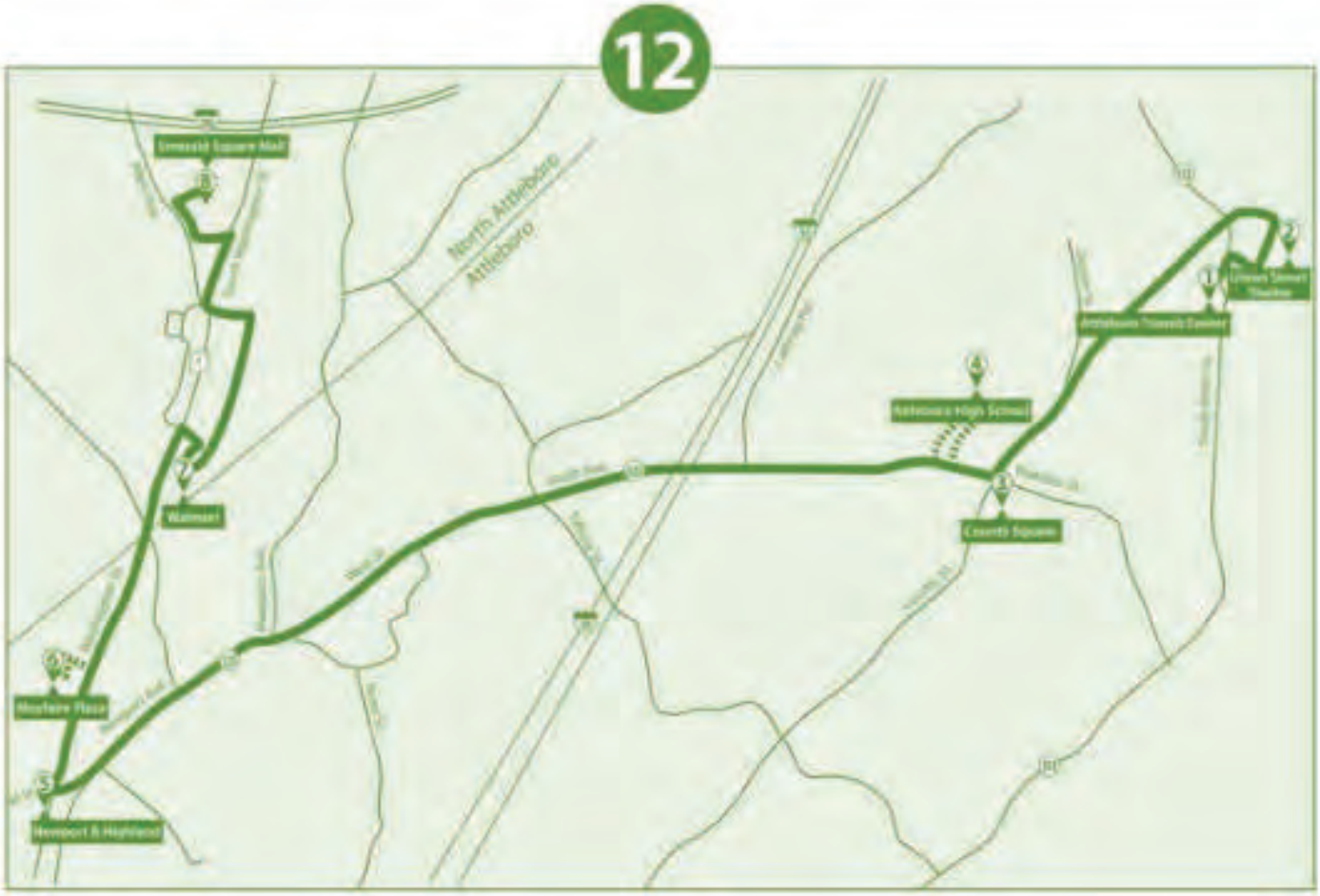
-Implement night service +$123,000

ADA Impact:

There is moderate impact on the ADA service with the addition of Sunday and extended night service.

Other Notes:

Weekday service hours would be extended later in the evening and service would be added on Sundays.


12
North Attleboro
Attleboro
Walmart
Attleboro High School
County Square

Route 12

Attleboro/So. Attleboro/No. Attleboro

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 12	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	171	127
Avg. Saturday Ridership	148	83
Sunday Ridership	N/A	N/A
Passengers/Hr	15.41	12.03
Saturday Passengers/Hr	20.18	11.17
Sunday Passengers/Hr	N/A	N/A

Financials	Route 12	System Average (Attleboro/Taunton)
Farebox Recovery	13.4%	8.2%
Weekday Subsidy per passenger	$4.52	$7.01
Saturday Subsidy per passenger	$3.29	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attelboro/Taunton

Route Ranking: 6/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon—Sat	Mon.-Sun.
Route Length	15.5	15.5 miles
Route Run—Time	55 min.	55 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	6:00 AM - 6:58 PM	6:00 AM – 10:58 PM
Hours of Operation Saturday	9:00 AM - 4:58 PM	9:00 AM - 4:58 PM
Hours of Operation Sunday	N/A	9:00 AM - 4:58 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement Sunday service +$69,000

-Implement night service +$123,000

ADA Impact:

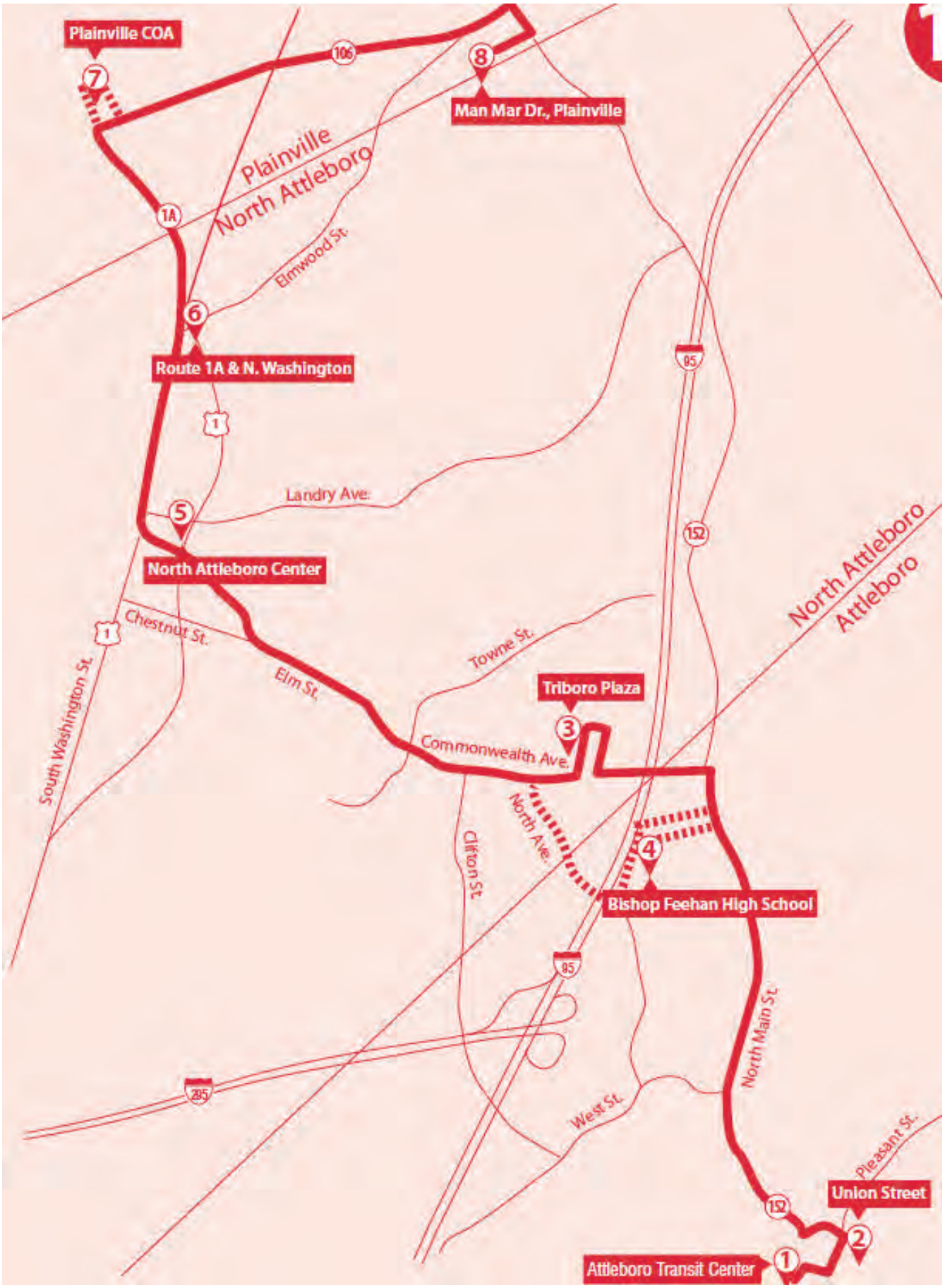
There will be moderate impact on the ADA service with the addition of Sunday and night service.

Other Notes:

Weekday service hours would be extended later in the evening and service would be added on Sundays.

Route 14

Attelboro/No. Attleboro/Plainville



Route 14

Attelboro/No. Attleboro/Plainville

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 14	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	147	127
Avg. Saturday Ridership	67	83
Sunday Ridership	N/A	N/A
Passengers/Hr	13.57	12.03
Saturday Passengers/Hr	11.96	11.17
Sunday Passengers/Hr	N/A	N/A

Financials	Route 14	System Average (Attleboro/Taunton)
Farebox Recovery	11.8%	8.2%
Weekday Subsidy per passenger	$4.52	$7.01
Saturday Subsidy per passenger	$3.29	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attelboro/Taunton

Route Ranking: 7/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon—Sat	Mon.-Sun.
Route Length	18.2 miles	18.2 miles
Route Run—Time	50 min.	50 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	5:40 AM - 6:57 PM	5:40 AM – 10:57 PM
Hours of Operation Saturday	9:00 AM - 4:48 PM	9:00 AM - 4:48 PM
Hours of Operation Sunday	N/A	9:00 AM - 4:48 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement Sunday service +$53,000

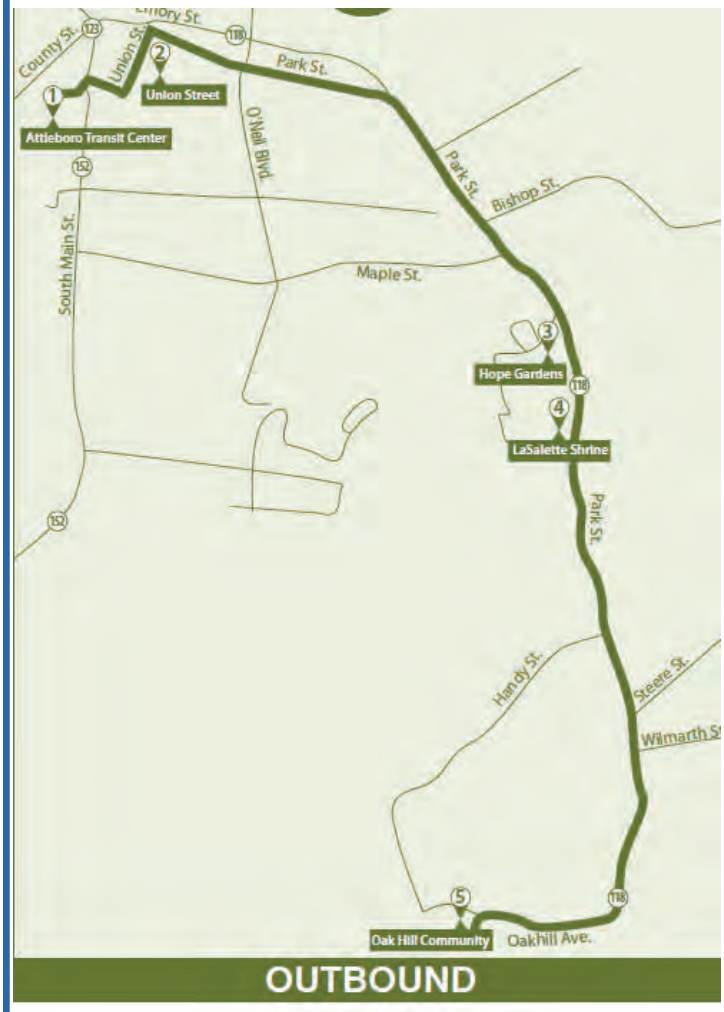
-Implement night service +$123,000

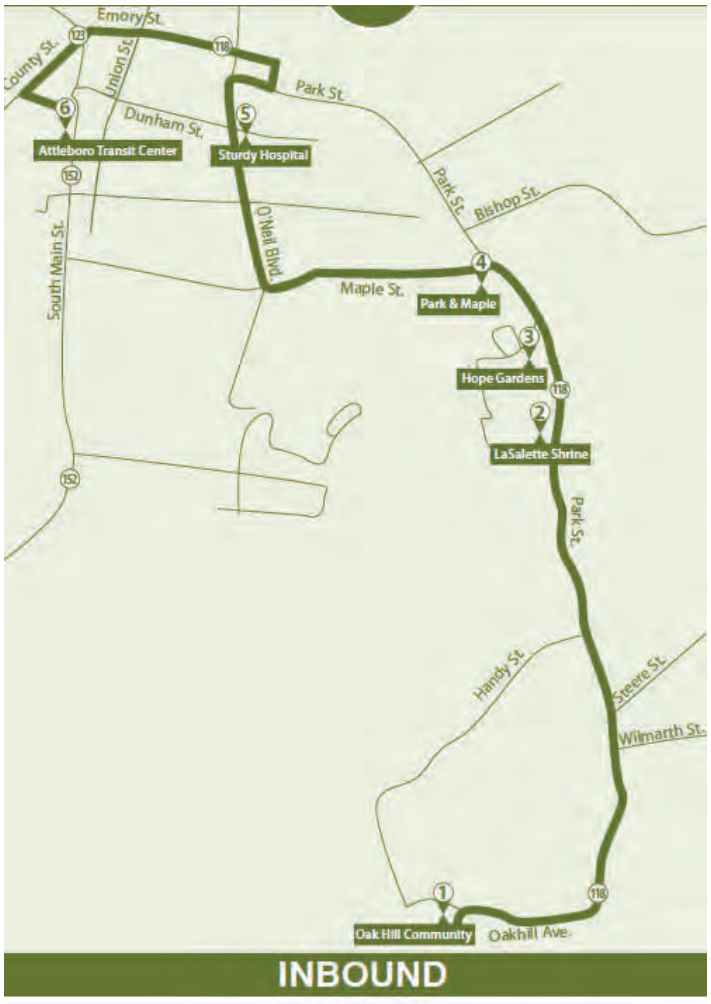
ADA Impact:

There will be moderate impact on the ADA service with the addition of Sunday and night service.

Other Notes:

Weekday service hours would be extended later in the evening and service would be added on Sundays.


Emory St.
County St.
Union St.
Park St.
O'Neil Blvd.
Bishop St.
South Main St.
Maple St.
Hope Gardens
LaSalette Shrine
Handy St.
Steere St.
Wilmarth St.
Oak Hill Community
Oakhill Ave.
1 Attleboro Transit Center
2 Union Street
3 Hope Gardens
4 LaSalette Shrine
5 Oak Hill Community
OUTBOUND


Emory St.
County St.
Union St.
Park St.
Dunham St.
O'Neil Blvd.
Bishop St.
South Main St.
Maple St.
Hope Gardens
LaSalette Shrine
Handy St.
Steere St.
Wilmarth St.
Oak Hill Community
Oakhill Ave.
6 Attleboro Transit Center
5 Sturdy Hospital
4 Park & Maple
3 Hope Gardens
2 LaSalette Shrine
1 Oak Hill Community
INBOUND

Current Route Performance

Productivity	Route 15	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	34	127
Avg. Saturday Ridership	14	83
Sunday Ridership	N/A	N/A
Passengers/Hr	11.09	12.03
Saturday Passengers/Hr	7.30	11.17
Sunday Passengers/Hr	N/A	N/A

Financials	Route 15	System Average (Attleboro/Taunton)
Farebox Recovery	9.6%	8.2%
Weekday Subsidy per passenger	$6.56	$7.01
Saturday Subsidy per passenger	$10.31	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attelboro/Taunton

Route Ranking: 16/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon—Sat	Mon.-Sun.
Route Length	15.1	15.1 miles
Route Run—Time	23 min.	23 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	10:00 AM - 5:29 PM	10:00 AM – 9:29 PM
Hours of Operation Saturday	8:35 AM - 6:04 PM	8:35 AM - 6:04 PM
Hours of Operation Sunday	N/A	8:35 AM - 6:05 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement Sunday service +$18,000

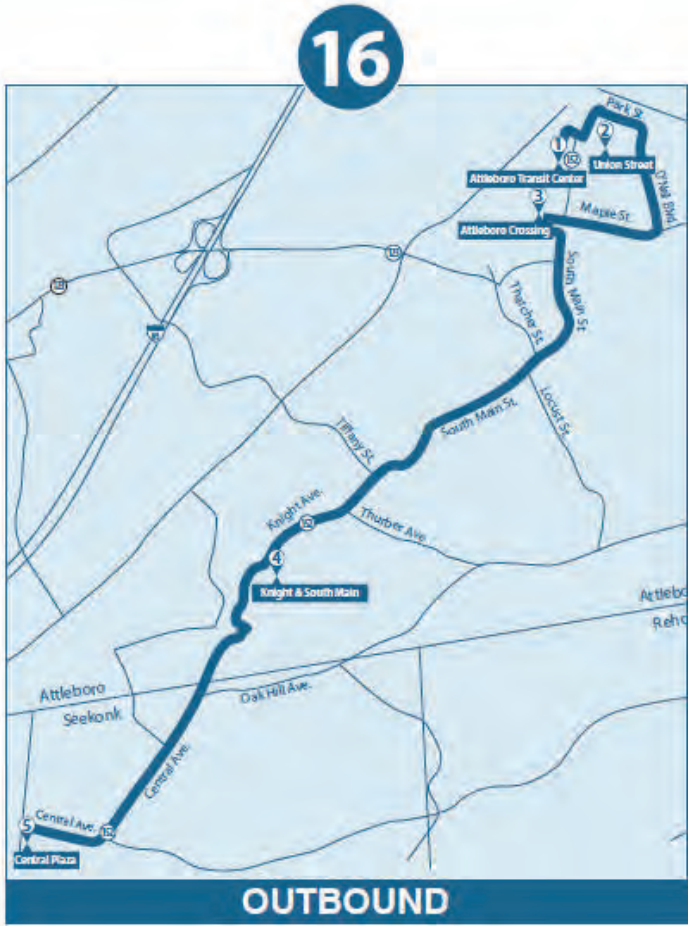
-Implement night service +$123,000

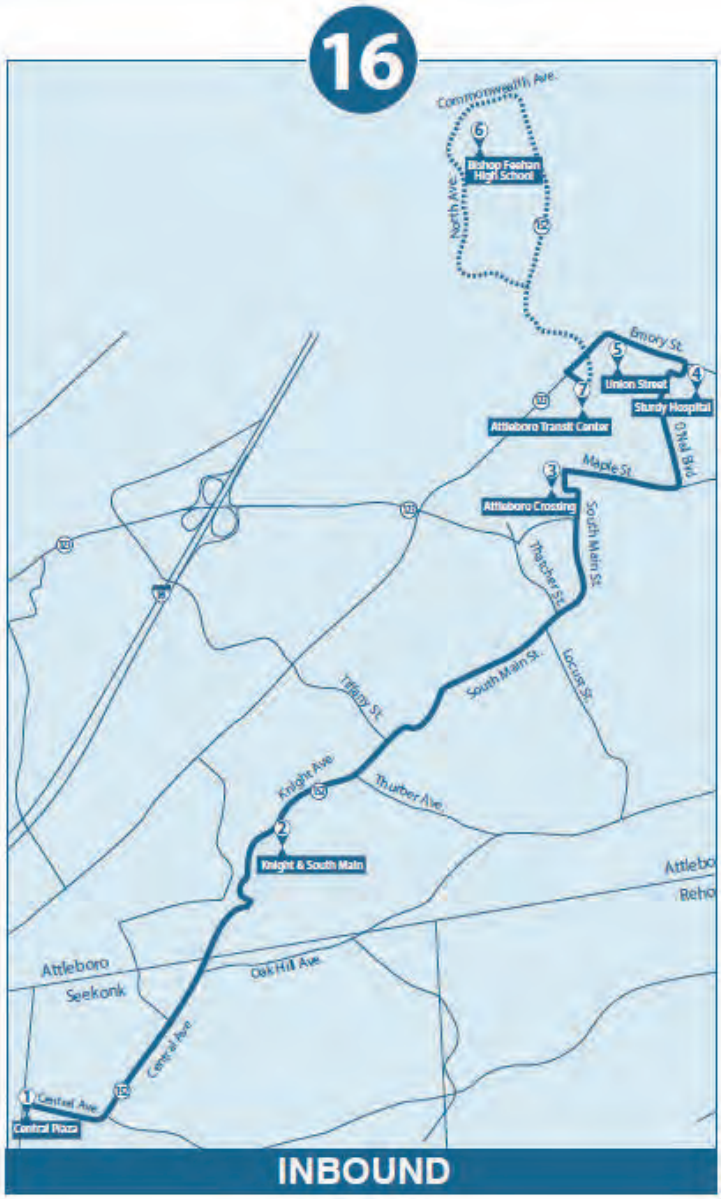
ADA Impact:

There will be moderate impact on the ADA service with the addition of Sunday and night service.

Other Notes:

Weekday service hours would be extended later in the evening and service would be added on Sundays.


16
Park St
Union Street
Attleboro Transit Center
Maple St
Attleboro Crossing
Orial Blvd
South Main St
Thacher St
Locust St
Tiffany St
Knight Ave
Thurber Ave
Knight & South Main
Attleboro
Seekonk
Oak Hill Ave
Central Ave
Central Plaza
OUTBOUND


16
Commonwealth Ave
Bishop Feehan High School
North Ave
Emory St
Union Street
Sturdy Hospital
Attleboro Transit Center
Orial Blvd
Maple St
Attleboro Crossing
South Main St
Thacher St
Locust St
Tiffany St
Knight Ave
Thurber Ave
Knight & South Main
Attleboro
Seekonk
Oak Hill Ave
Central Ave
Central Plaza
INBOUND

Current Route Performance

Productivity	Route 16	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	133	127
Avg. Saturday Ridership	60	83
Sunday Ridership	N/A	N/A
Passengers/Hr	12.51	12.03
Saturday Passengers/Hr	9.38	11.17
Sunday Passengers/Hr	N/A	N/A

Financials	Route 16	System Average (Attleboro/Taunton)
Farebox Recovery	10.9%	8.2%
Weekday Subsidy per passenger	$5.73	$7.01
Saturday Subsidy per passenger	$7.88	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attelboro/Taunton

Route Ranking: 12/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.– Sat.	Mon.-Sun.
Route Length	12.9 miles	12.9 miles
Route Run—Time	48 min.	48 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	5:35 AM - 6:26 PM	5:35 AM – 10:46 PM
Hours of Operation Saturday	9:35 AM - 5:26 PM	9:35 AM - 5:26 PM
Hours of Operation Sunday	N/A	9:35 AM - 5:26 PM

Route Alignment Changes:

No alignment changes.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement Sunday service +$61,000

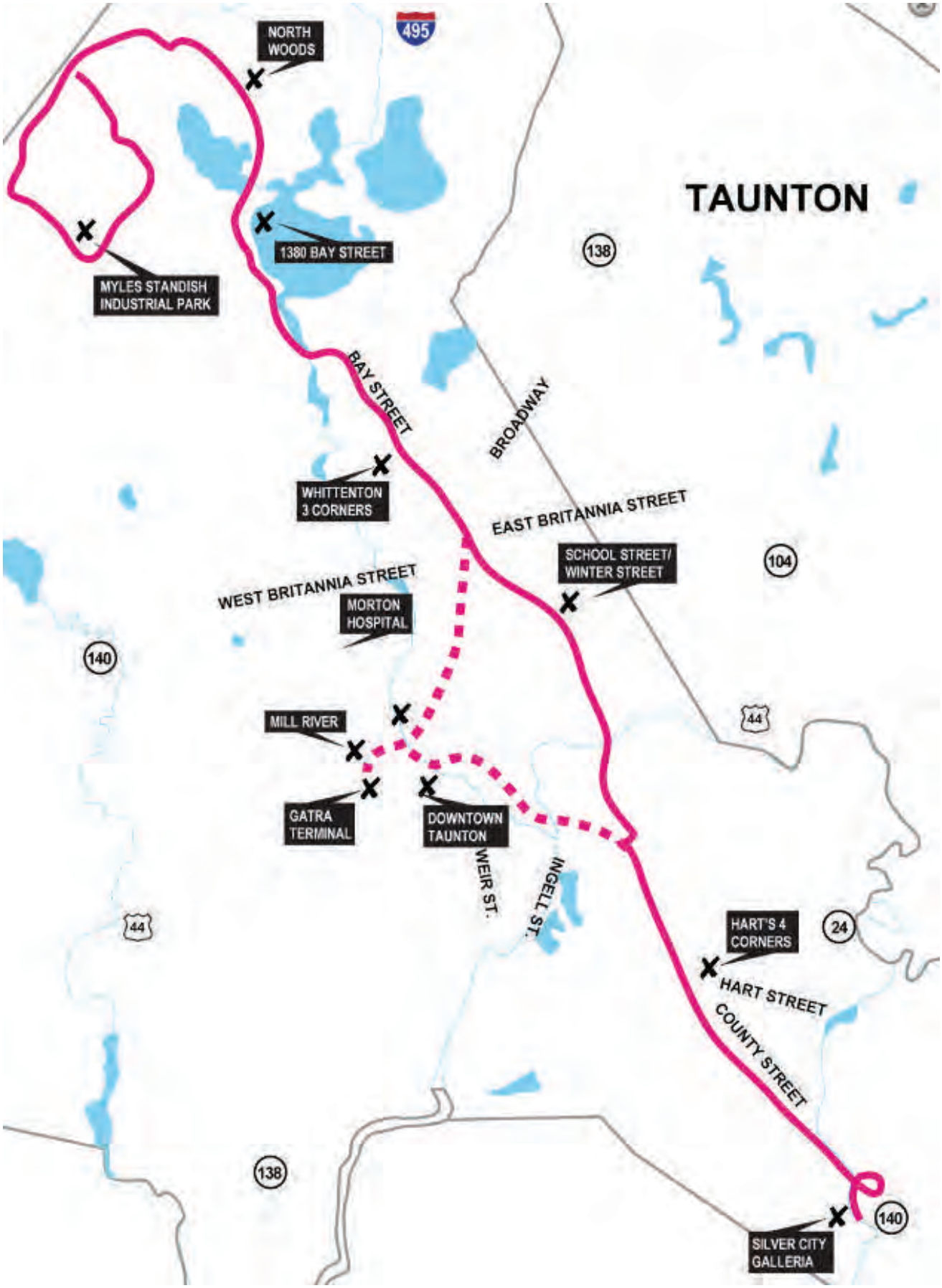
-Implement night service +$123,000

ADA Impact:

There will be moderate impact on the ADA service with the addition of Sunday and night service.

Other Notes:

Weekday service hours would be extended later in the evening and service would be added on Sundays.


NORTH WOODS
495
TAUNTON
1380 BAY STREET
138
MYLES STANDISH INDUSTRIAL PARK
BAY STREET
BROADWAY
WHITTENTON 3 CORNERS
EAST BRITANNIA STREET
SCHOOL STREET/ WINTER STREET
104
WEST BRITANNIA STREET
MORTON HOSPITAL
140
MILL RIVER
44
GATRA TERMINAL
DOWNTOWN TAUNTON
WEIR ST.
MGELL ST.
HART'S 4 CORNERS
24
HART STREET
COUNTY STREET
138
140
SILVER CITY GALLERIA

Route 3

Silver City—Myles Standish Industrial Park

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	25	127
Avg. Saturday Ridership	N/A	N/A
Sunday Ridership	N/A	N/A
Passengers/Hr	3.88	12.03
Saturday Passengers/Hr	N/A	N/A
Sunday Passengers/Hr	N/A	N/A

Financials	Route	System Average (Attleboro/Taunton)
Farebox Recovery	3.4%	8.2%
Weekday Subsidy per passenger	$20.06	$7.01
Saturday Subsidy per passenger	N/A	N/A
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attelboro/Taunton

Route Ranking: 28/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.—Fri.	N/A
Route Length	21.4	N/A
Route Run—Time	58 min.	N/A
Weekday Headway	60 min.	N/A
Saturday Headway	N/A	N/A
Sunday Headway	N/A	N/A
Hours of Operations M-F	6:00 AM - 8:30 AM 2:30 PM—6:10 PM	N/A
Hours of Operation Saturday	N/A	N/A
Hours of Operation Sunday	N/A	N/A

Route Alignment Changes:

Eliminate Route.

Phase 1:

-Eliminate service -$123,000

Phase 2:

-None

Phase 3:

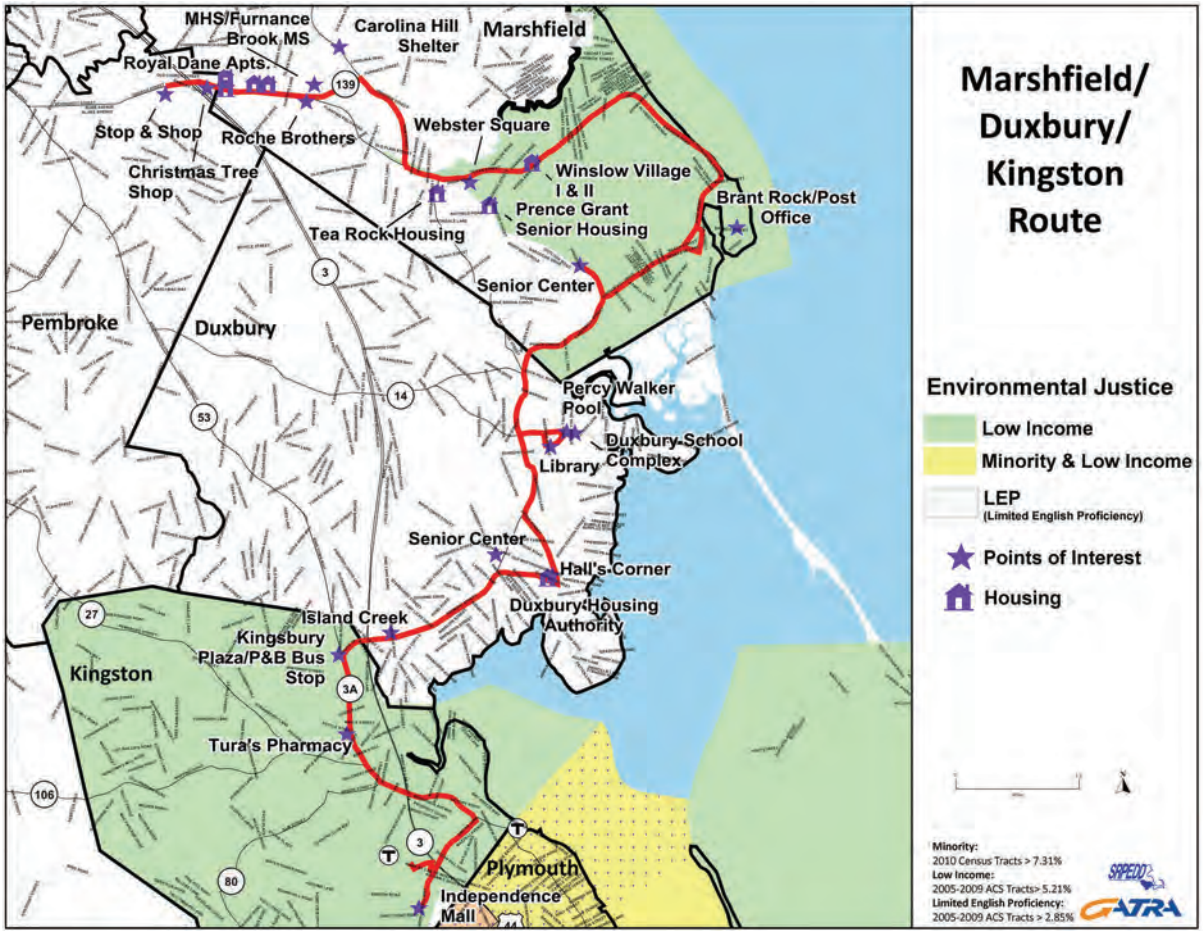
-None

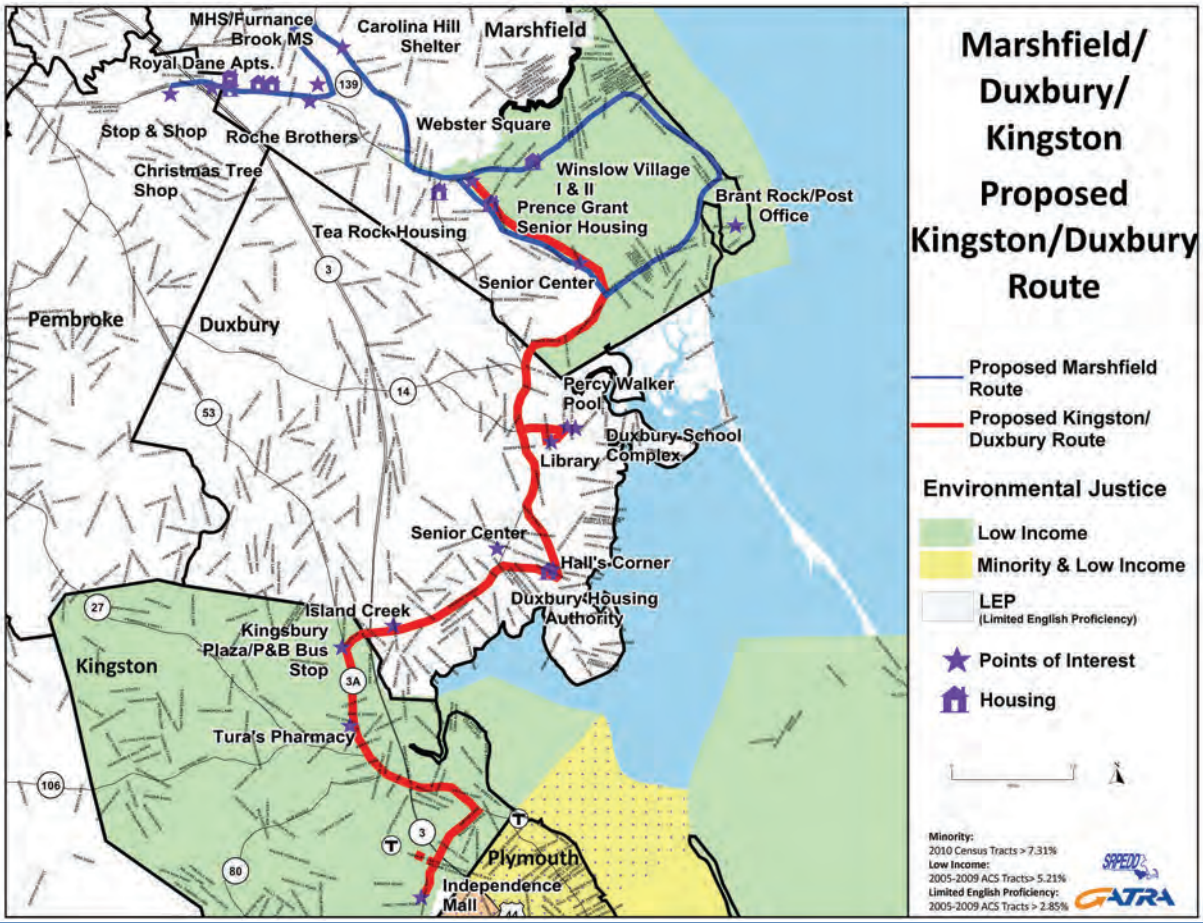
ADA Impact:

There is no impact on the ADA service, area is covered by other routes.

Other Notes:

This route would be eliminated due to its low performance and duplicative routing with other routes.


MHS/Furnance Brook MS
Carolina Hill Shelter
Marshfield
Royal Dane Apts.
Stop & Shop
Roche Brothers
Webster Square
Christmas Tree Shop
Winslow Village I & II
Prence Grant Senior Housing
Brant Rock/Post Office
Tea Rock Housing
Senior Center
Pembroke
Duxbury
Percy Walker Pool
Duxbury School Complex
Library
Senior Center
Hall's Corner
Island Creek
Duxbury Housing Authority
Kingsbury Plaza/P&B Bus Stop
Kingston
Tura's Pharmacy
Plymouth
Independence Mall
Marshfield/ Duxbury/ Kingston Route
Environmental Justice
Low Income
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Housing
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%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Proposed Marshfield Route
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Housing
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Current Route Performance

Productivity	Sail N.	System Average (Northeast)
Avg. Daily Weekday Ridership	142	94
Avg. Saturday Ridership	77	80
Sunday Ridership	N/A	N/A
Passengers/Hr	4.5	8.5
Saturday Passengers/Hr	4.1	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	Sail N.	System Average (Northeast)
Farebox Recovery	2.7%	8.2%
Weekday Subsidy per passenger	$17.39	$10.93
Saturday Subsidy per passenger	$19.03	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Northeast

Route Ranking: 24/30

Proposed Service Changes

	Current	Proposed Marshfield Route
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	50 miles	29 miles
Route Run—Time	160 min.	70 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	6:00 AM – 7:10 PM	6:00 AM – 11:10 PM
Hours of Operation Saturday	8:30 AM – 6:50 PM	8:30 AM – 6:50 PM
Hours of Operation Sunday	N/A	8:30 AM – 6:50 PM

Route Alignment Changes:

The majority of this proposed Kingston/ Duxbury route would maintain the routing of the Marshfield/Duxbury/ Kingston Route. Beginning at the Independence Mall it would travel to the Marshfield Senior Center via Route 3A and Route 139. The alignment change begins at the Senior Center. From the Senior Center it would travel to Webster Square via Webster Street.

Phase 1:

-Split current SAIL route $0

Phase 2:

-None

Phase 3:

-Implement Sunday service +$88,000

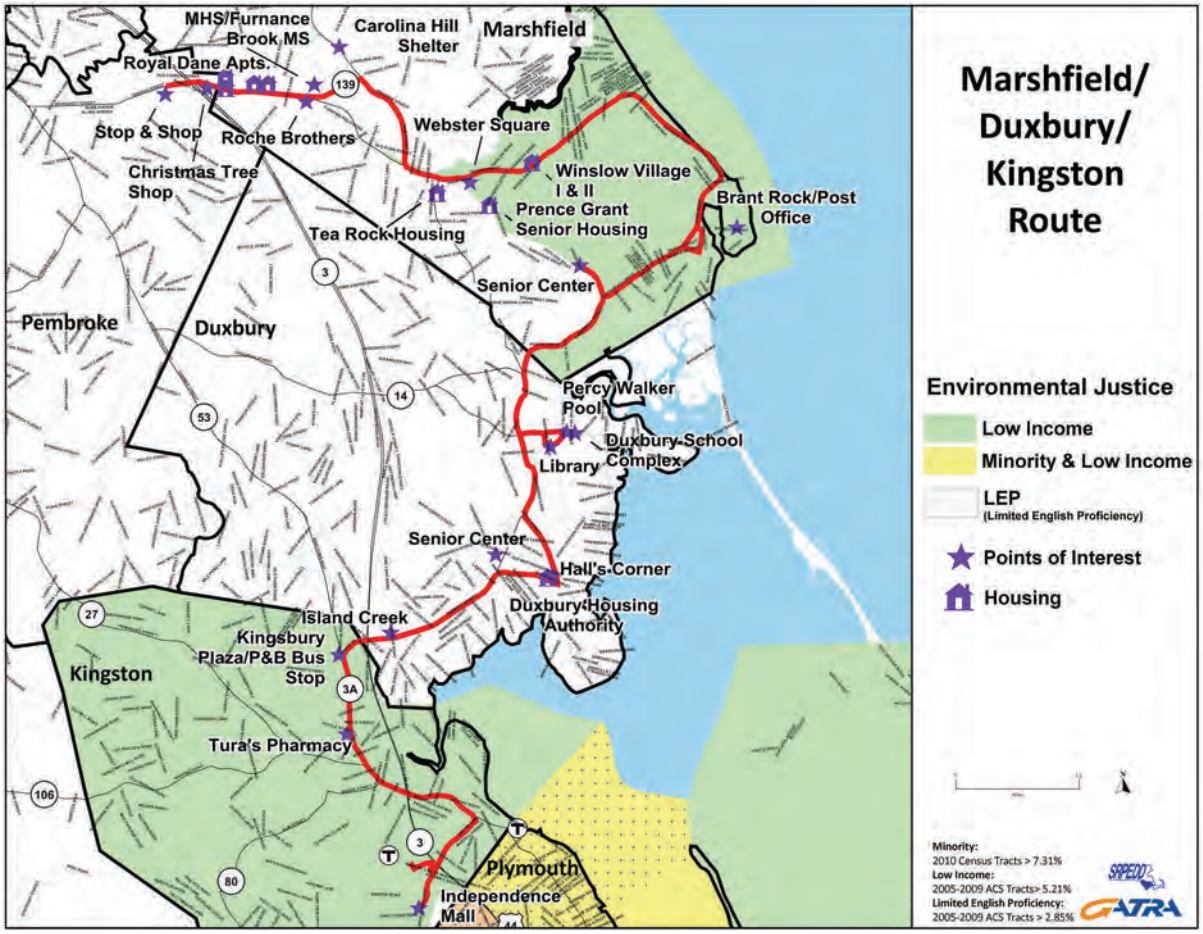
ADA Impact:

There will be minimal ADA impacts.

Other Notes:

The Marshfield/Kingston/Duxbury route would be split into two separate routes, North and South, and meet at Webster Square. This is the North route.

This route could run as a regular route or as a flex/deviated route.


MHS/Furnance Brook MS
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Marshfield
Royal Dane Apts.
Stop & Shop
Roche Brothers
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Christmas Tree Shop
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Independence Mall
Marshfield/ Duxbury/ Kingston Route
Environmental Justice
Low Income
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Housing
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
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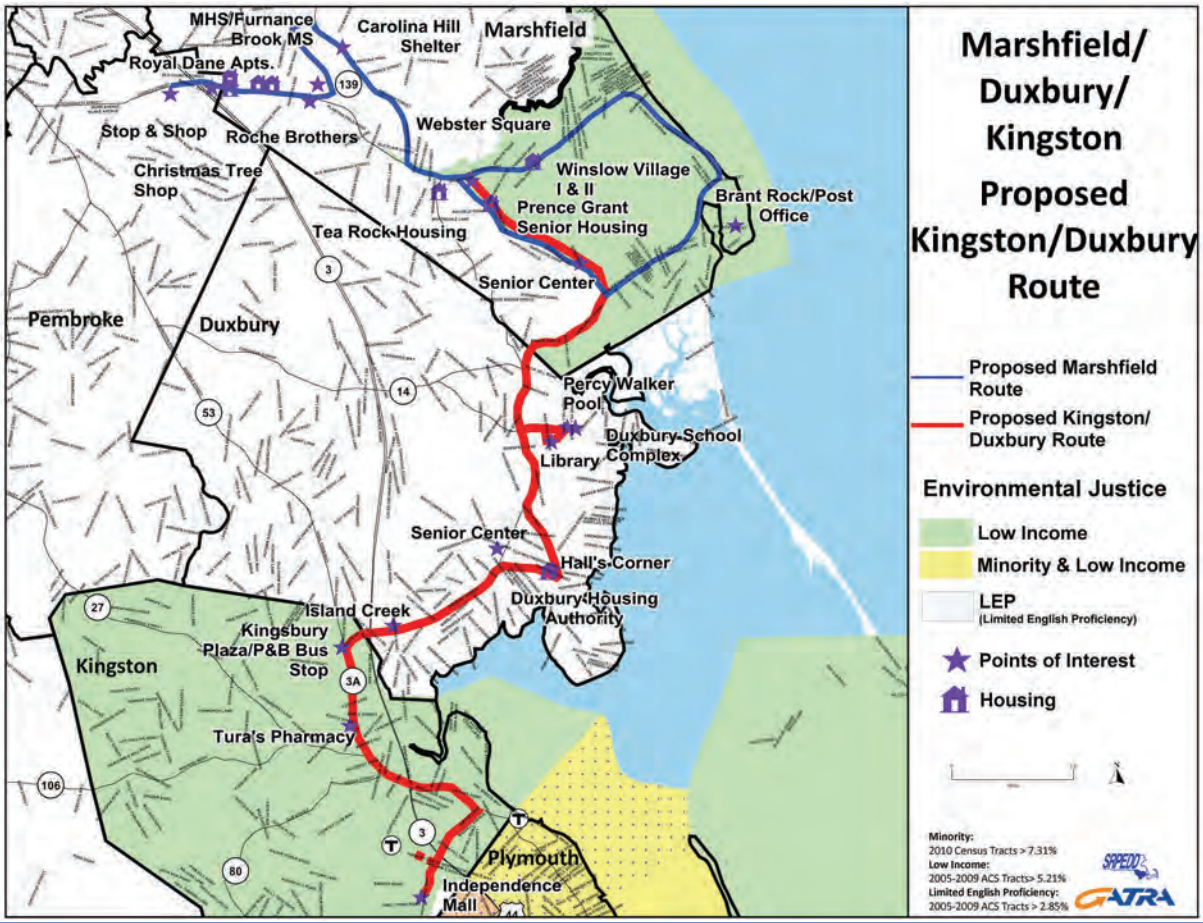
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Points of Interest
Housing
Minority:
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Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Current Route Performance

Productivity	Sail S.	System Average (Northeast)
Avg. Daily Weekday Ridership	142	94
Avg. Saturday Ridership	77	80
Sunday Ridership	N/A	N/A
Passengers/Hr	4.5	8.5
Saturday Passengers/Hr	4.1	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	Sail S.	System Average (Northeast)
Farebox Recovery	2.7%	8.2%
Weekday Subsidy per passenger	$17.39	$10.93
Saturday Subsidy per passenger	$19.03	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Northeast

Route Ranking: 24/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	50 miles	30 miles
Route Run—Time	160 min.	80 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	6:00 AM – 7:10 PM	6:00 AM – 11:10 PM
Hours of Operation Saturday	8:30 AM – 6:50 PM	8:30 AM – 6:50 PM
Hours of Operation Sunday	N/A	8:30 AM – 6:50 PM

Route Alignment Changes:

The majority of this proposed Kingston/ Duxbury route would maintain the routing of the Marshfield/Duxbury/ Kingston Route. Beginning at the Inde-pendence Mall it would travel to the Marshfield Senior Center via Route 3A and Route 139. The alignment change begins at the Senior Center. From the Senior Center it would travel to Webster Square via Webster Street.

Phase 1:

-Split current SAIL route $0

Phase 2:

-None

Phase 3:

-Implement Sunday service $88,000

ADA Impact:

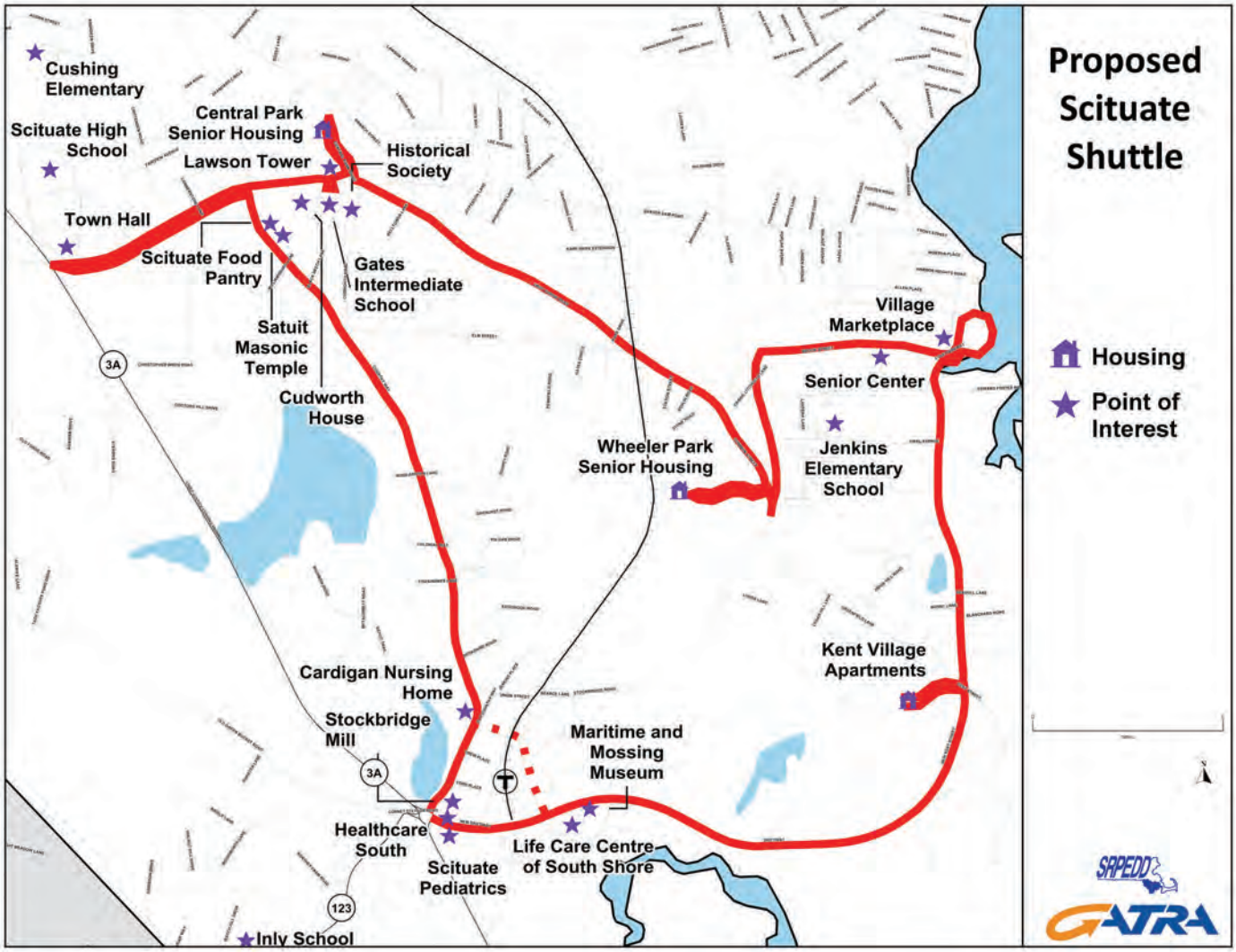
There will be minimal ADA impacts.

Other Notes:

The Marshfield/Kingston/Duxbury route would be split into two separate routes, North and South, and meet at Webster Square. This is the South route.

The MBTA station would continue to be served as it currently is.

This route could run as a regular route or as a flex/deviated route.


Proposed Scituate Shuttle
Housing
Point of Interest
Cushing Elementary
Scituate High School
Central Park Senior Housing
Lawson Tower
Historical Society
Town Hall
Scituate Food Pantry
Gates Intermediate School
Satuit Masonic Temple
Cudworth House
3A
Village Marketplace
Senior Center
Jenkins Elementary School
Wheeler Park Senior Housing
Kent Village Apartments
Cardigan Nursing Home
Stockbridge Mill
Maritime and Mossing Museum
Healthcare South
Scituate Pediatrics
Life Care Centre of South Shore
123
Inly School
SRPEDD
GATRA

Current Route Performance

Productivity	Scituate	System Average (Northeast)
Avg. Daily Weekday Ridership	N/A	94
Avg. Saturday Ridership	N/A	80
Sunday Ridership	N/A	N/A
Passengers/Hr	N/A	8.5
Saturday Passengers/Hr	N/A	8.3
Sunday Passengers/Hr	N/A	N/A

Financials	Scituate	System Average (Northeast)
Farebox Recovery	N/A	8.2%
Weekday Subsidy per passenger	N/A	$10.93
Saturday Subsidy per passenger	N/A	$11.94
Sunday Subsidy per passenger	N/A	N/A

Route Type: In-Town Shuttle

Route Ranking: N/A

Proposed Service Changes

	Current	Proposed
Days Operated	N/A	Mon.-Sun.
Route Length	N/A	8.6 miles
Route Run—Time	N/A	28min.
Weekday Headway	N/A	30 min.
Saturday Headway	N/A	30 min.
Sunday Headway	N/A	30 min.
Hours of Operations M-F	N/A	6:25 AM-7:48 PM (9:15 PM summer)
Hours of Operation Saturday	N/A	9:00 AM - 5:55 PM (9 PM summer)
Hours of Operation Sunday	N/A	9:00 AM - 5:55 PM (9 PM summer)

Route Alignment Changes:

A new in-town shuttle would be created in Scituate. It would travel from the Town Hall/Police Station—First Parish Rd.—Gates Intermediate School—Central Park Senior Housing—First Parish Rd.—Common St. to Wheeler Park Senior Center—Stockbridge Rd.—Brook St. to Harbor Walk/Town Marina—Kent St. to Kent Village Apartments—New Kent St.—Country Way and return to Scituate Town Hall/Police Station.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Implement route +$304,000

ADA Impact:

There is currently no ADA service in Scituate. New ADA service would need to be implemented.

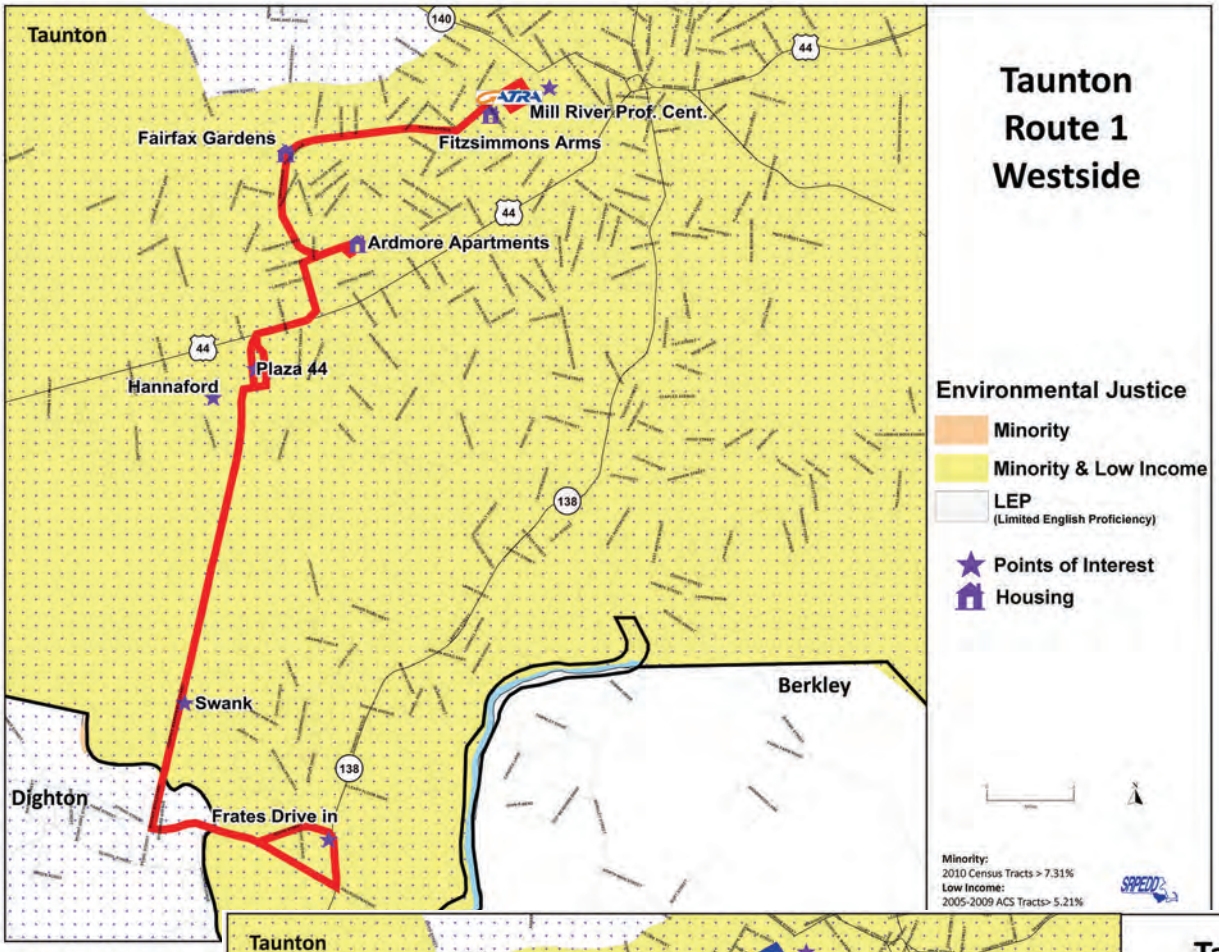
Other Notes:

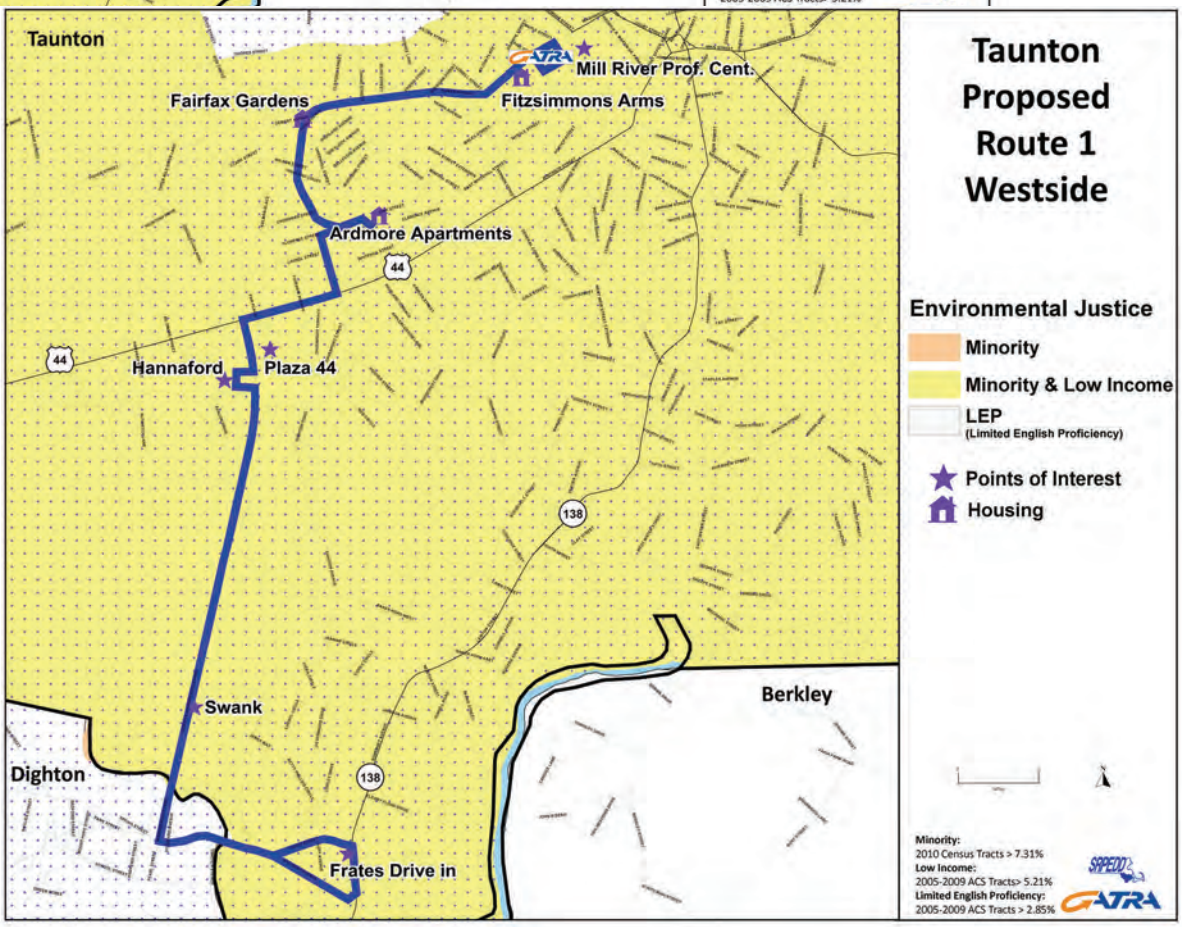
Locations served include Healthcare South, Greenbush MBTA Station, Kent Village Apartments, Scituate Senior Center, Central Park Senior Housing and Scituate Town Hall/Police Station.

The Greenbush MBTA station would be served on a deviation only. When creating the schedule for this shuttle, Greenbush MBTA arrival/departure time points will have to be taken into consideration in order to create a connection.

Route 1

Westside





Route 1

Westside

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 1	System Average
Avg. Daily Weekday Ridership	58	127
Avg. Saturday Ridership	44	83
Sunday Ridership	N/A	N/A
Passengers/Hr	7.87	12.0
Saturday Passengers/Hr	8.6	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 1	System Average
Farebox Recovery	6.8%	8.2%
Weekday Subsidy per passenger	$6.37	$7.01
Saturday Subsidy per passenger	$8.63	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attleboro/Taunton

Route Ranking: 21/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	9.1 miles	9.1 miles
Route Run—Time	35 min.	35 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	6:00 AM – 6:37 PM	6:00 AM – 10:37 PM
Hours of Operation Saturday	9:00 AM - 5:37 PM	9:00 AM - 5:37 PM
Hours of Operation Sunday	N/A	9:00 AM - 5:37 PM

Route Alignment Changes:

Route 1 would serve Hannaford Supermarket rather than the closed Shaw's.

Phase 1:

-Service Hannafords $0

Phase 2:

-None

Phase 3:

-Sunday service +$48,000

-Night service +$123,000

ADA Impact:

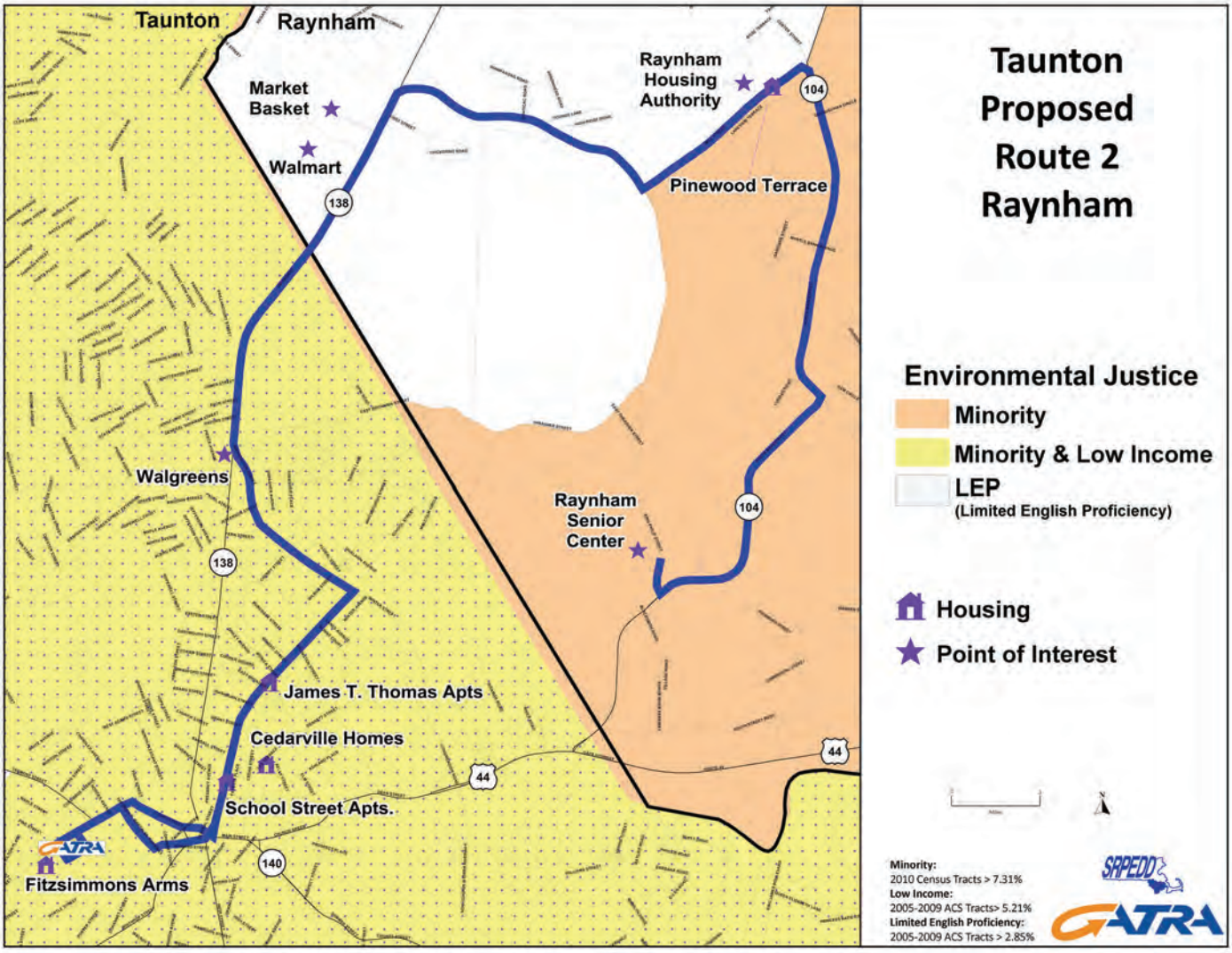
There will be no impact on ADA service.

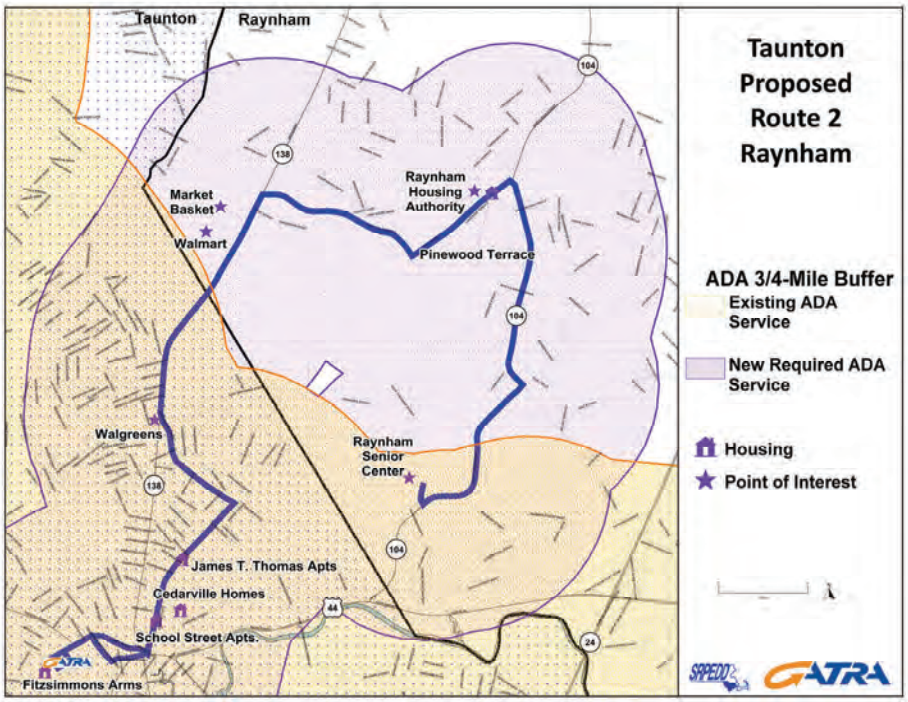
Other Notes:

Hannaford Supermarket is located across the street from Shaw's which closed in 2013.

Route 2

Taunton/Raynham





Route 2

Taunton/Raynham

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 2	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	N/A	127
Avg. Saturday Ridership	N/A	83
Sunday Ridership	N/A	N/A
Passengers/Hr	N/A	12.0
Saturday Passengers/Hr	N/A	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 2	System Average (Attleboro/Taunton)
Farebox Recovery	N/A	8.2%
Weekday Subsidy per passenger	N/A	$7.01
Saturday Subsidy per passenger	N/A	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route

Route Ranking: N/A

Proposed Service Changes

	Current	Proposed
Days Operated	N/A	Mon.-Sun.
Route Length	N/A	15.8 miles
Route Run—Time	N/A	50 min.
Weekday Headway	N/A	60 min.
Saturday Headway	N/A	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	N/A	7:00 AM – 10:50 PM
Hours of Operation Saturday	N/A	9:30 AM - 6:20 PM
Hours of Operation Sunday	N/A	9:30 AM - 6:20 PM

Route Alignment Changes:

Create a new route from the GATRA terminal with service on Route 138 to Walmart and Market Basket. The route would turn onto King Phillip Street to Mill Street and serve the Raynham Housing Authority. It would turn onto North Main Street (Route 104) to South Main Street to King Phillip Street and terminate at the Raynham Senior Center.

Phase 1:

-None

Phase 2:

-None

Phase 3:

-Cost to implement $540,000

ADA Impact:

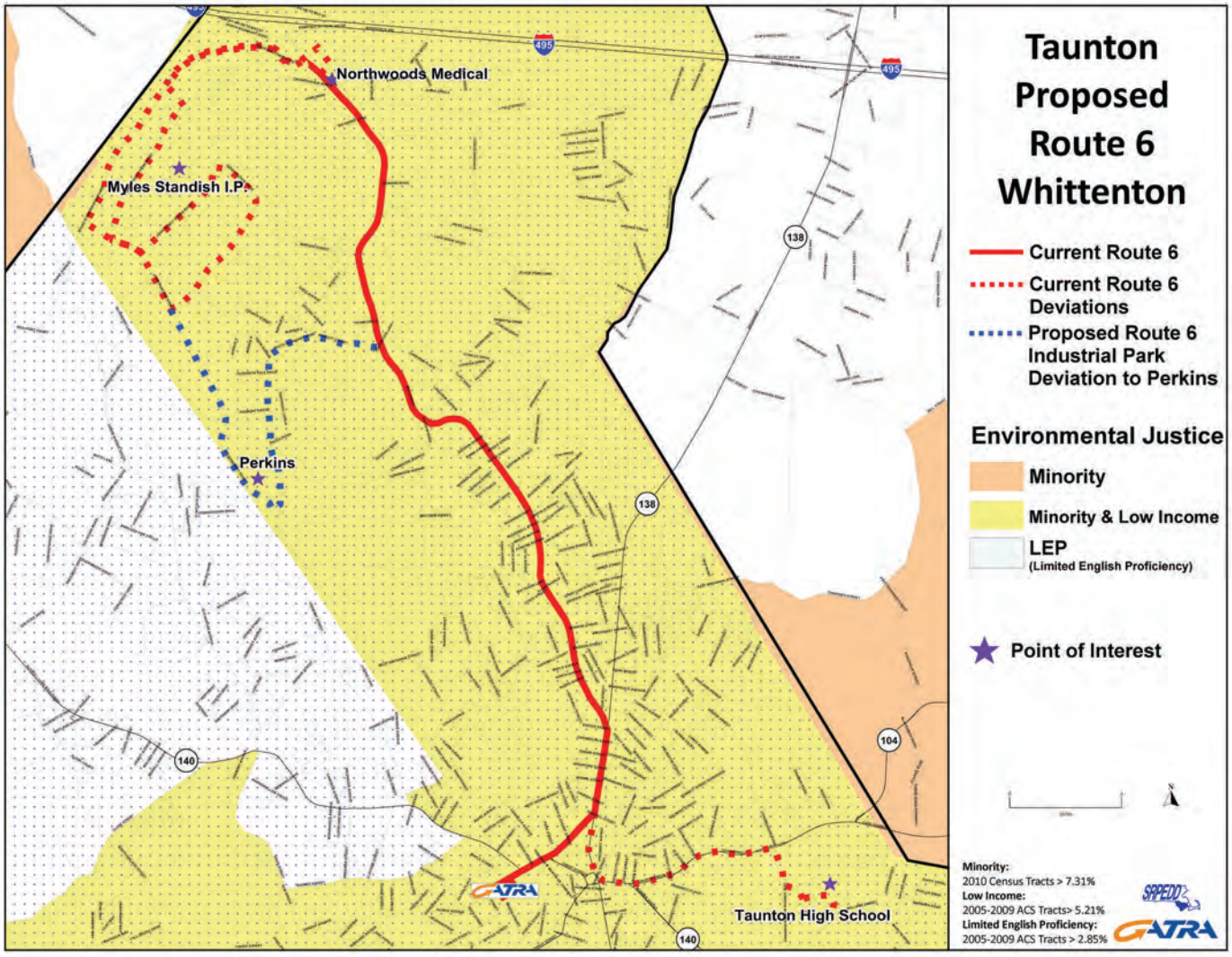
Roughly half of the 3/4-mile buffer around this new route is already being served by GATRA's ADA service. However, there will be a need to further expand the service (mostly north) to completely serve the 3/4-mile buffer around this new route.

Other Notes:

Implement service on Sundays.

Route 6

Whittenton



Route 6

Whittenton

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 6	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	155	127
Avg. Saturday Ridership	67	83
Sunday Ridership	N/A	N/A
Passengers/Hr	17.95	12.0
Saturday Passengers/Hr	10.9	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 6	System Average
Farebox Recovery	15.6%	8.2%
Weekday Subsidy per passenger	$3.78	$7.01
Saturday Subsidy per passenger	$6.69	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attleboro/Taunton

Route Ranking: 4/30

Proposed Service Changes

	Current (with Industrial Park Deviation)	Proposed (with Industrial Park Deviation)
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	15.5 miles	15 miles
Route Run—Time	34 min.	40 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min
Hours of Operations M-F	6:35 AM – 6:33 PM	6:35 AM – 10:33 PM
Hours of Operation Saturday	9:00 AM - 4:52 PM	9:00 AM - 4:52 PM
Hours of Operation Sunday	N/A	9:00 AM - 4:52 PM

Route Alignment Changes:

Route 6 would remain unchanged with the exception of extending the Industrial Park service to Perkins. The alignment change would be from John Hancock Road to Fremont Street to Bassett Street to Bay Street.

Phase 1:

-Deviate to Perkins $0

Phase 2:

-None

Phase 3:

-Sunday service +$58,000

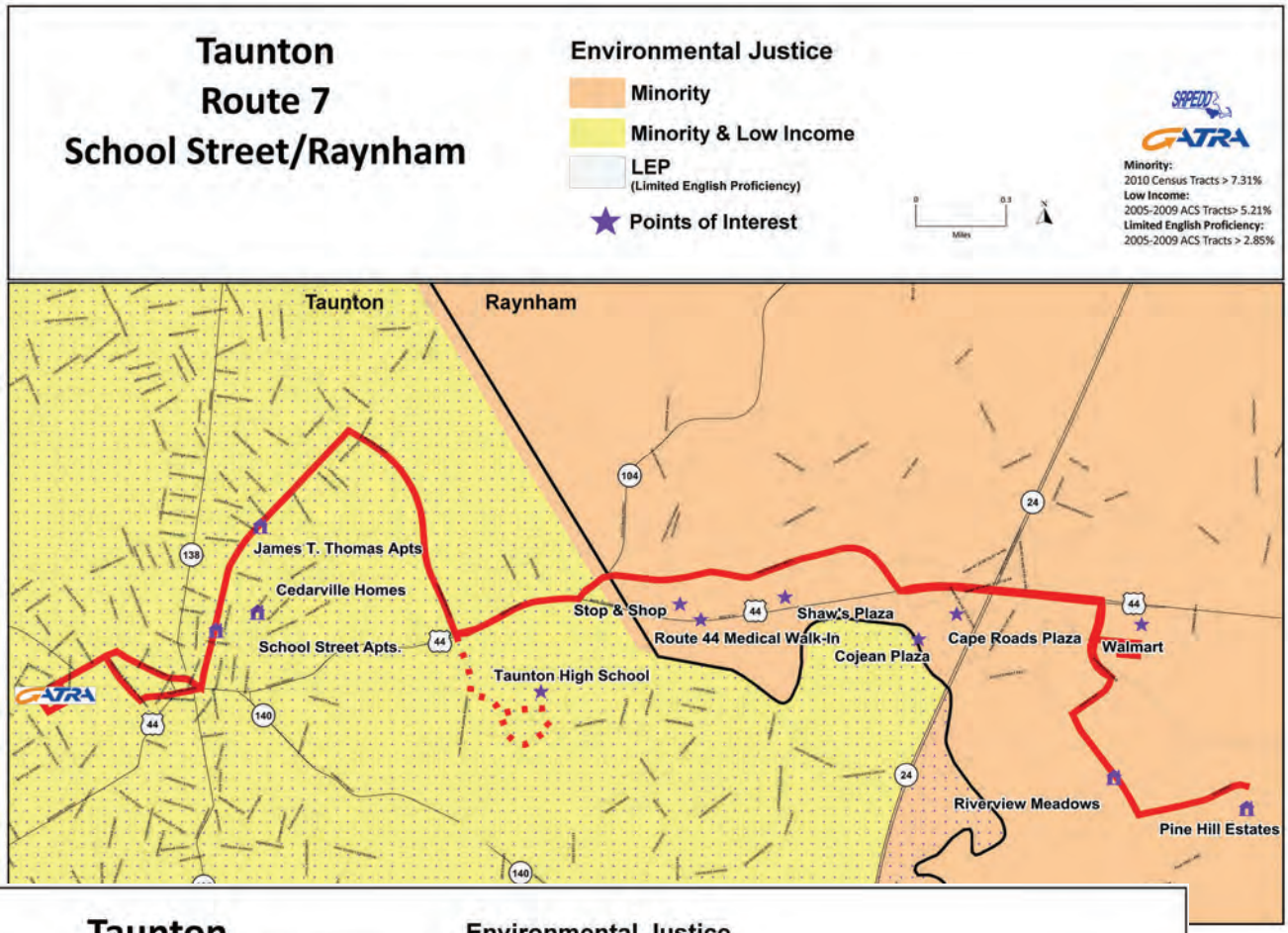
-Night service +$123,000

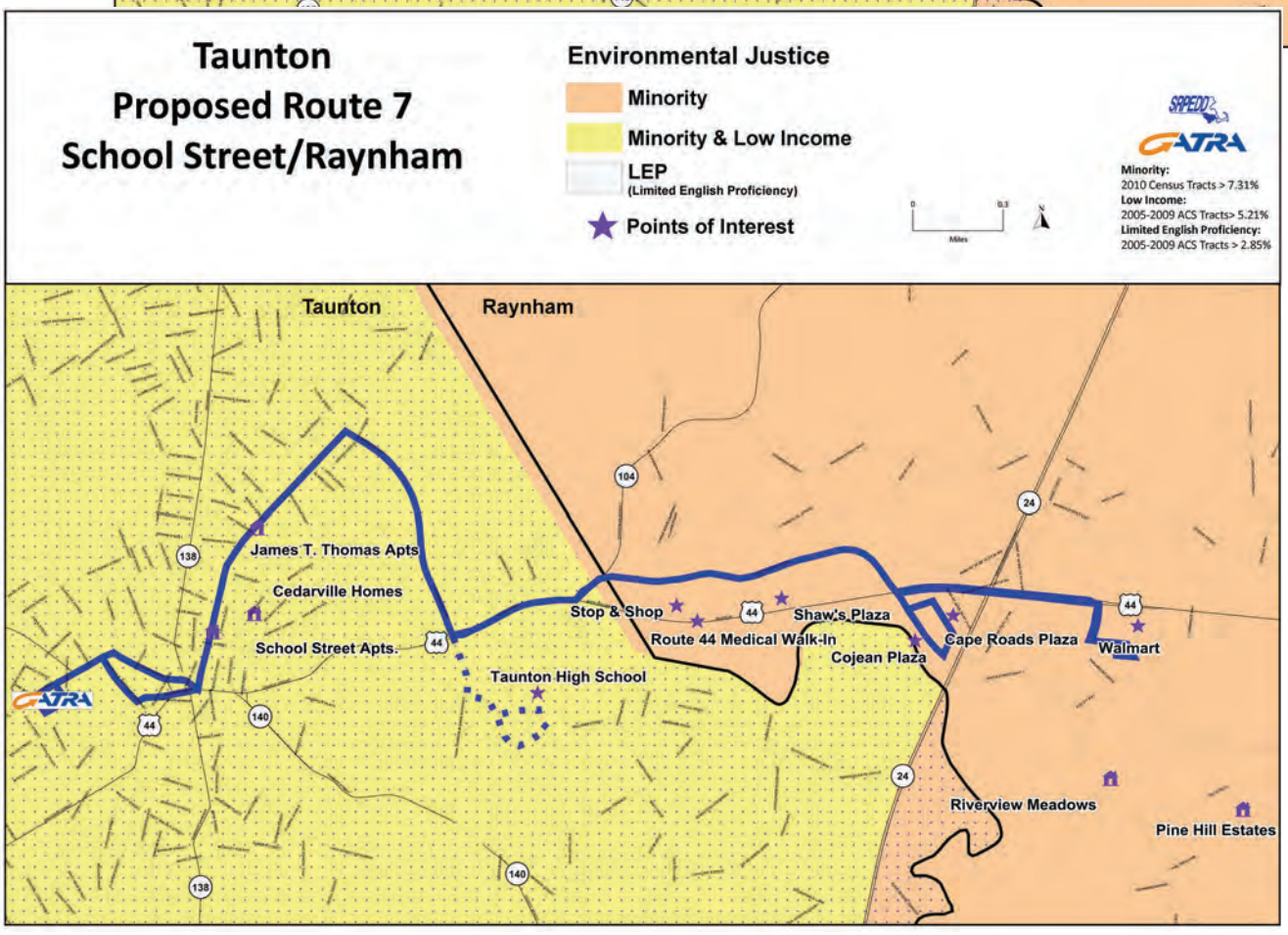
ADA Impact:

There will be no impact on ADA service.

Other Notes:

Perkins would only be served on the current Industrial Park deviation schedule.


Taunton
Route 7
School Street/Raynham
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Miles
SPEEDO
GATRA
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Taunton
Raynham
James T. Thomas Apts
Cedarville Homes
School Street Apts.
Taunton High School
Stop & Shop
Route 44 Medical Walk-In
Shaw's Plaza
Cojean Plaza
Cape Roads Plaza
Walmart
Riverview Meadows
Pine Hill Estates


Taunton
Proposed Route 7
School Street/Raynham
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SPEEDO
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School Street Apts.
Taunton High School
Stop & Shop
Route 44 Medical Walk-In
Shaw's Plaza
Cojean Plaza
Cape Roads Plaza
Walmart
Riverview Meadows
Pine Hill Estates

Route 7

School Street/Raynham

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 7	System Average
Avg. Daily Weekday Ridership	134	127
Avg. Saturday Ridership	61	83
Sunday Ridership	N/A	N/A
Passengers/Hr	12.5	12.0
Saturday Passengers/Hr	8.1	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 7	System Average
Farebox Recovery	10.8%	8.2%
Weekday Subsidy per passenger	$5.75	$7.01
Saturday Subsidy per passenger	$9.19	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attleboro/Taunton

Route Ranking: 13/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	12.6 miles	10.4 miles
Route Run—Time	50 min.	38 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	7:00 AM – 6:50 PM	7:00 AM – 10:50 PM
Hours of Operation Saturday	9:30 AM - 6:20 PM	9:30 AM - 6:20 PM
Hours of Operation Sunday	N/A	9:30 AM - 6:20 PM

Route Alignment Changes:

Service to Pine Hill Estates would be eliminated and new service to Cape Roads Plaza has been added.

Phase 1:

-Eliminate Pine Hill service $0

Phase 2:

-None

Phase 3:

-Implement Sunday service +$71,000

-Implement night service +$123,000

ADA Impact:

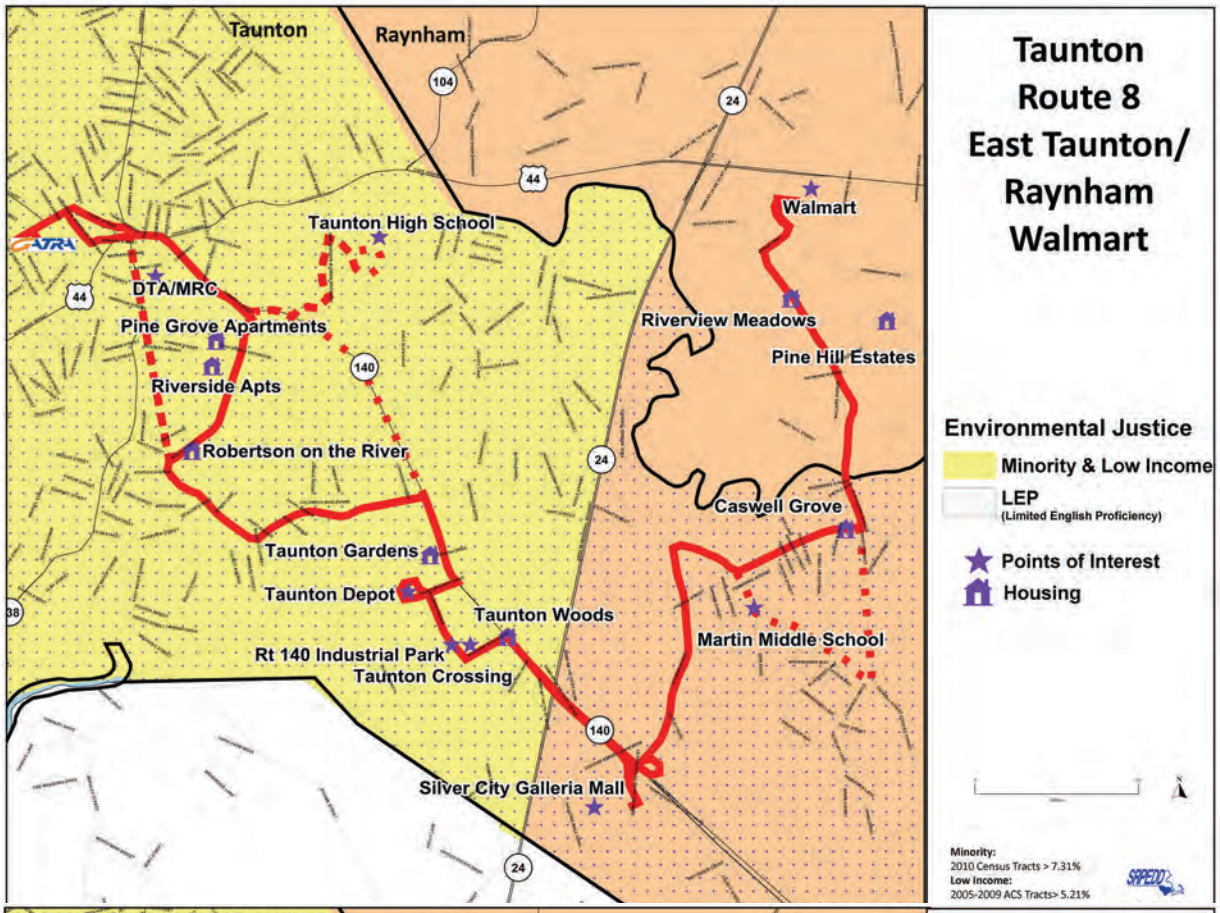
There will be no impact on ADA service.

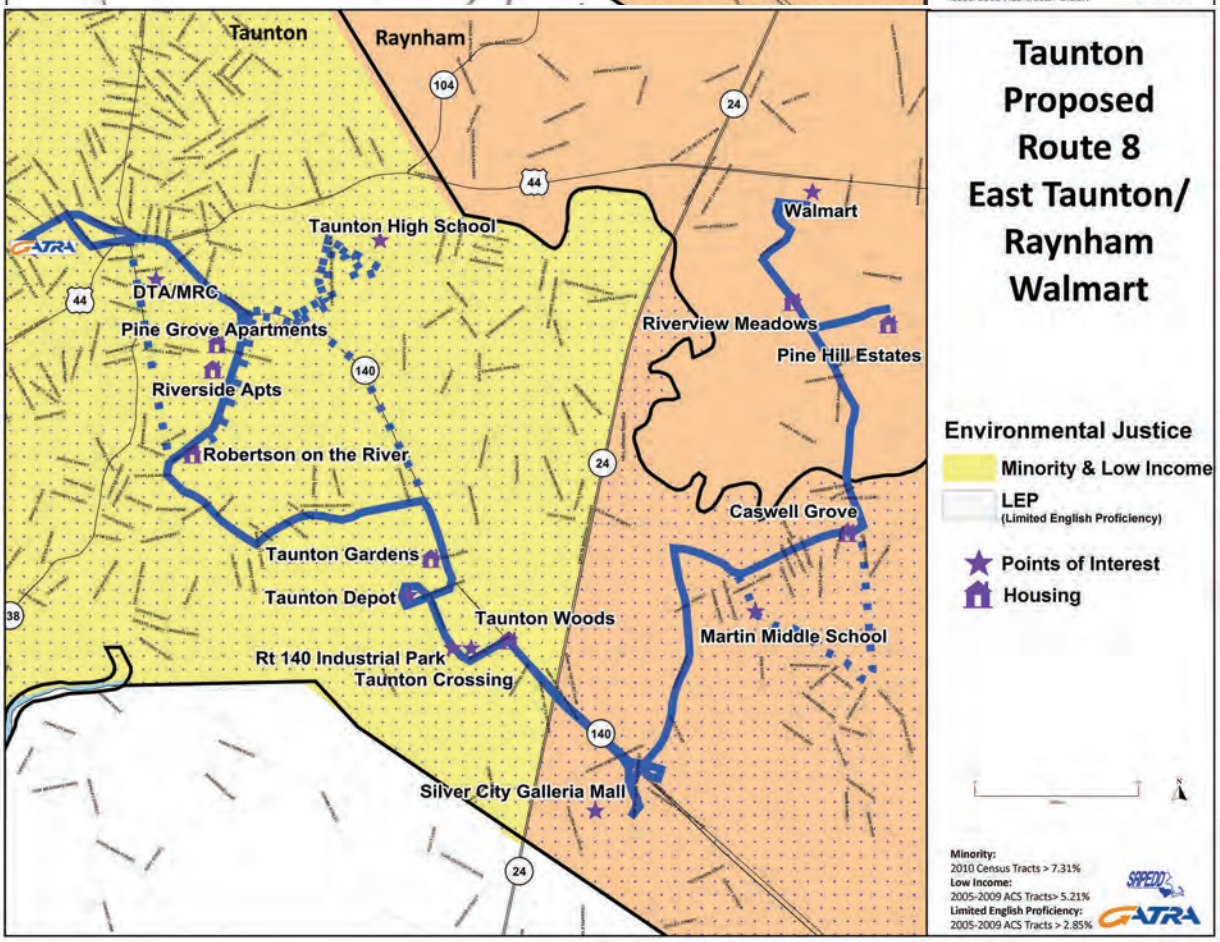
Other Notes:

Route 7 and Route 8 both serve Walmart and South Street E. Rather than Route 7 continuing to travel further south to serve Pine Hill Estates, it would terminate at Walmart. Route 8, which passes Pine Hill Estates, would now serve Pine Hill Estates.

Route 8

East Taunton/Raynham/Walmart





Route 8

East Taunton/Raynham/Walmart

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 8	System Average
Avg. Daily Weekday Ridership	316	127
Avg. Saturday Ridership	189	83
Sunday Ridership	N/A	N/A
Passengers/Hr	15.75	12.0
Saturday Passengers/Hr	14.2	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 8	System Average (Attleboro/Taunton)
Farebox Recovery	13.7%	8.2%
Weekday Subsidy per passenger	$4.41	$7.01
Saturday Subsidy per passenger	$4.98	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attleboro/Taunton

Route Ranking: 2/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	21.5 miles	22.4 miles
Route Run—Time	90 min.	95 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	5:45 AM – 7:45 PM	5:45 AM – 11:45 PM
Hours of Operation Saturday	9:00 AM - 6:45 PM	9:00 AM - 6:45 PM
Hours of Operation Sunday	N/A	9:00 AM - 6:45 PM

Route Alignment Changes:

Route 8 would remain unchanged with the exception of adding a deviation or call ahead service to Pine Hill Estates in Raynham.

Phase 1:

-Service Pine Hill $0

Phase 2:

-None

Phase 3:

-Implement Sunday service +$126,000

-Implement night service +$123,000

ADA Impact:

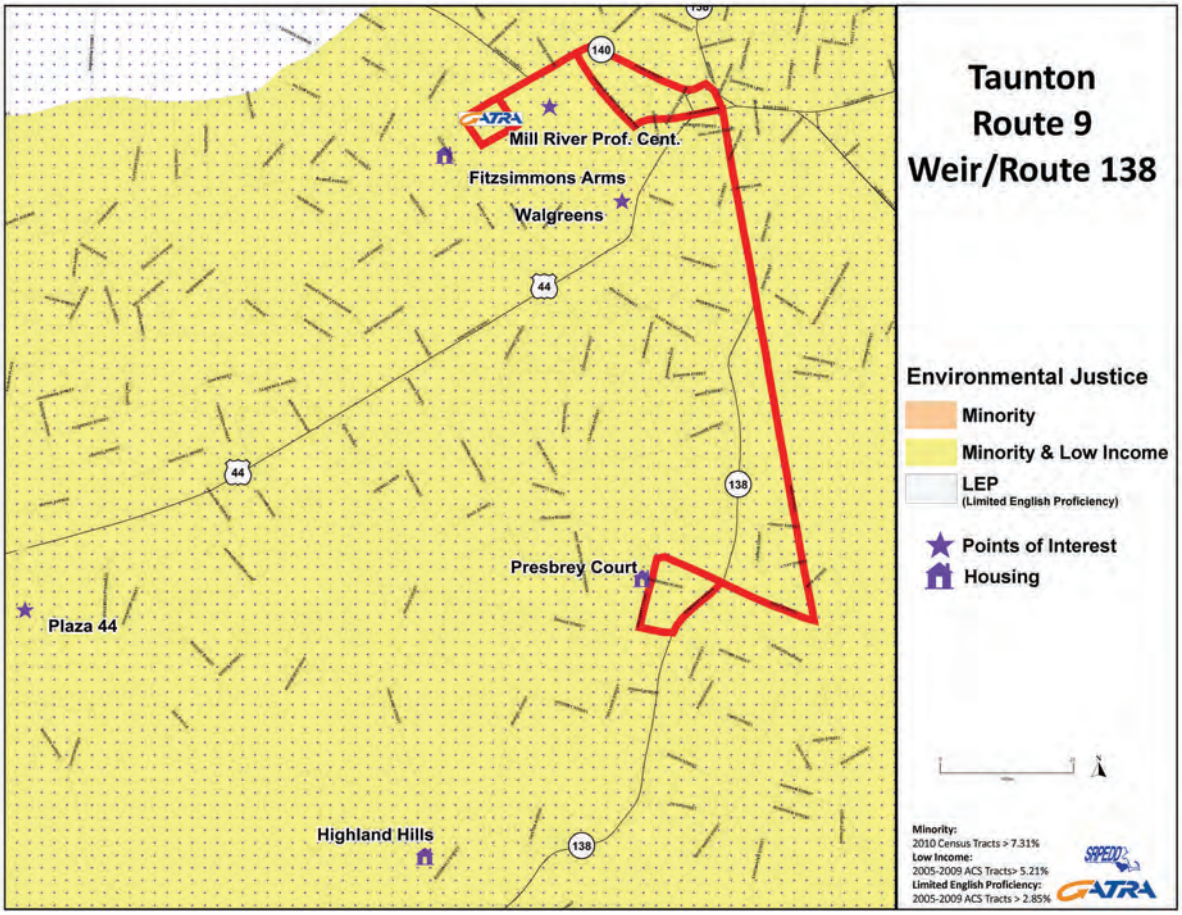
There will be no impact on ADA service.

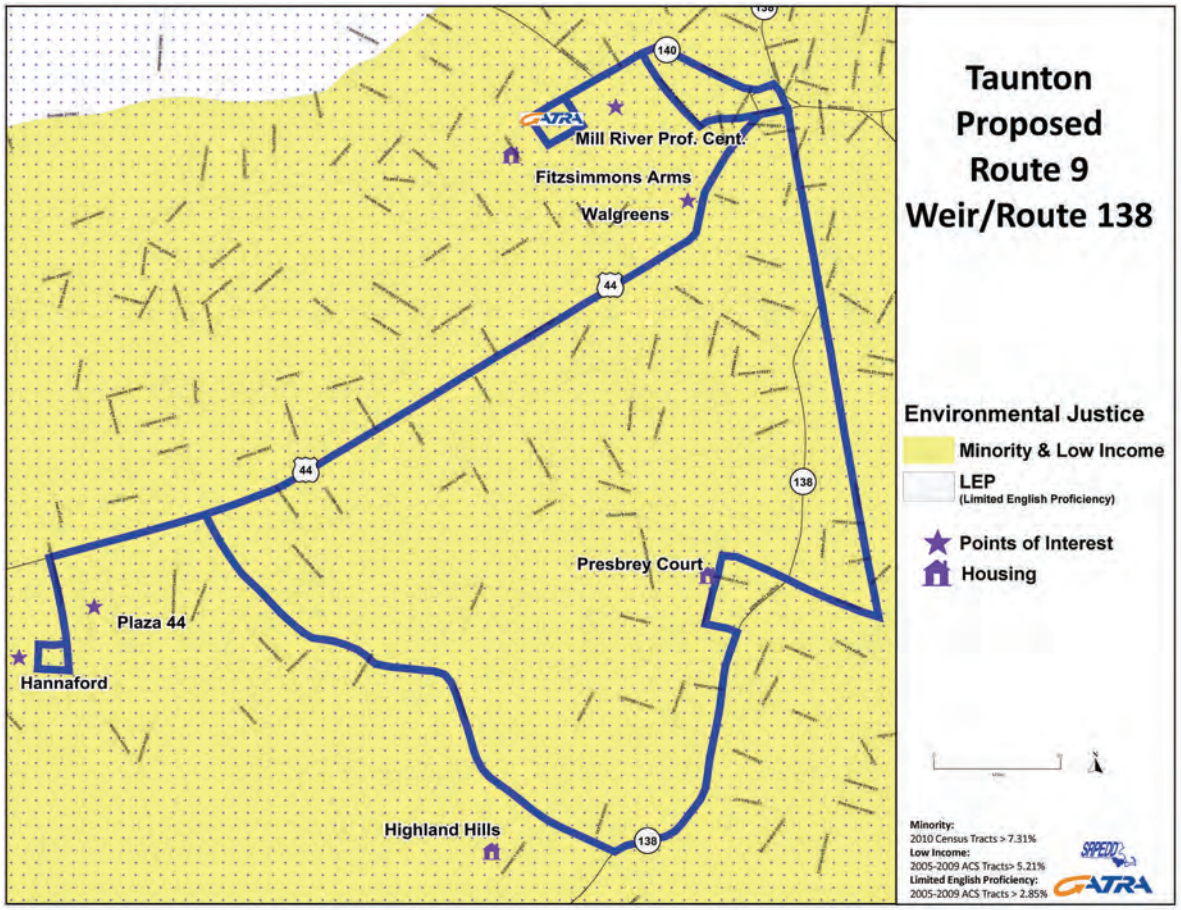
Other Notes:

Route 7 and Route 8 both serve Walmart and South Street E. Rather than Route 7 continuing to travel further south to serve Pine Hill Estates, it would terminate at Walmart. Route 8, which passes Pine Hill Estates, would now serve Pine Hill Estates on a deviation or call ahead service.

Route 9

Weir/Route 138





Route 9

Weir/Route 138

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Route 9	System Average (Attleboro/Taunton)
Avg. Daily Weekday Ridership	30	127
Avg. Saturday Ridership	15	83
Sunday Ridership	N/A	N/A
Weekday Passengers/Hr	8.33	12.0
Saturday Passengers/Hr	6.25	11.2
Sunday Passengers/Hr	N/A	N/A

Financials	Route 9	System Average
Farebox Recovery	7.2%	8.2%
Weekday Subsidy per passenger	$8.95	$7.01
Saturday Subsidy per passenger	$12.17	$7.80
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Attleboro/Taunton

Route Ranking: 22/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	4.3 miles	6.8 miles
Route Run—Time	40 min.	50 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	60 min.	60 min.
Sunday Headway	N/A	60 min.
Hours of Operations M-F	6:40 AM – 5:58 PM	6:40 AM – 5:58 PM
Hours of Operation Saturday	9:40 AM - 4:48 PM	9:40 AM - 4:48 PM
Hours of Operation Sunday	N/A	9:40 AM - 4:48 PM

Route Alignment Changes:

Route 9 would be extended to serve Highland Street, Hannaford Supermarket and return to the GATRA terminal via State Route 44.

Phase 1:

-None

Phase 2:

-Extend service to Hannaford +$189,000

Phase 3:

-Implement Sunday service +$123,000

-Implement night service +$23,000

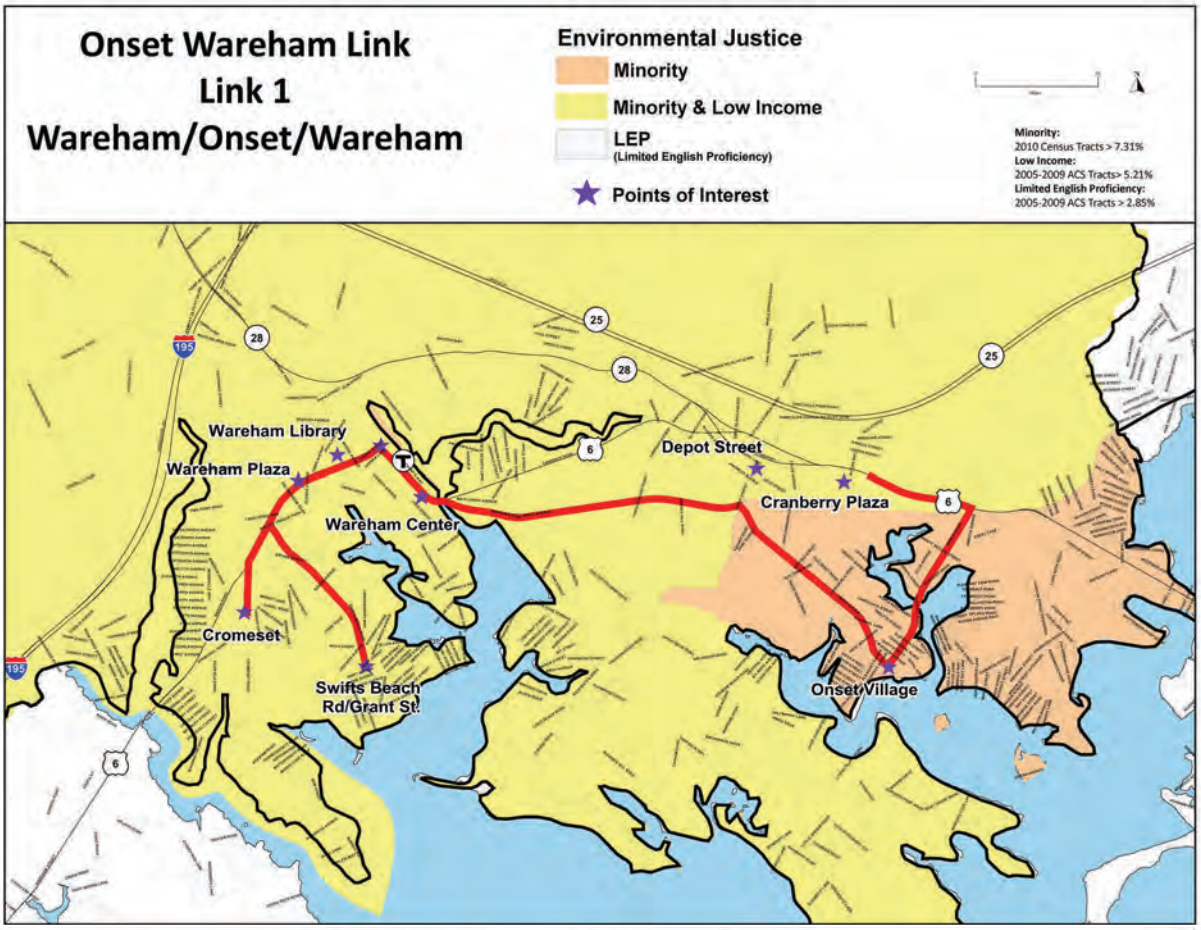
ADA Impact:

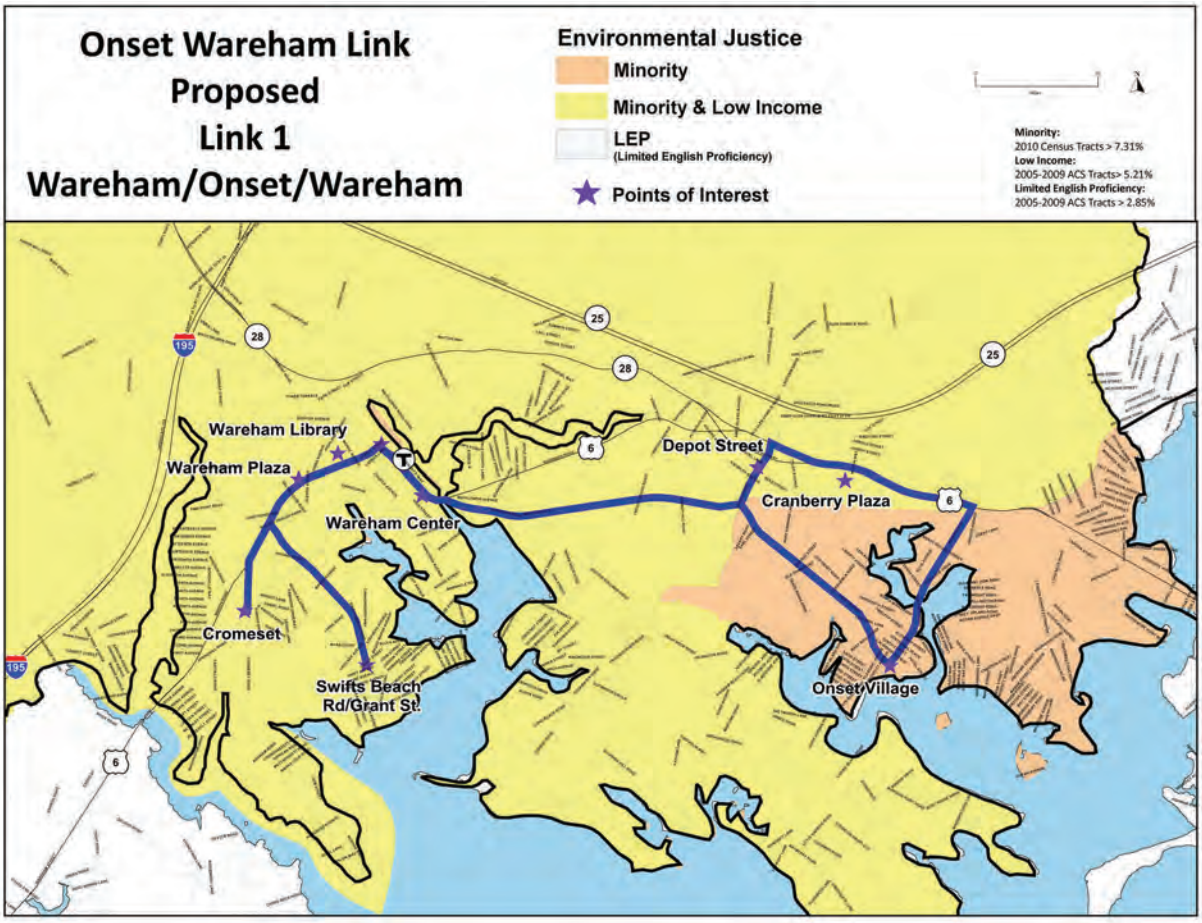
There will be minimal impact on ADA service.

Other Notes:

Highland Street and Route 44 are currently not served by the route.

Weir Street, as well as Presbrey Court, would continue to be served.


Onset Wareham Link
Link 1
Wareham/Onset/Wareham
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Wareham Library
Wareham Plaza
Wareham Center
Depot Street
Cranberry Plaza
Cromeset
Swifts Beach
Rd/Grant St.
Onset Village


Onset Wareham Link
Proposed
Link 1
Wareham/Onset/Wareham
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Wareham Library
Wareham Plaza
Wareham Center
Depot Street
Cranberry Plaza
Cromeset
Swifts Beach
Rd/Grant St.
Onset Village

Link 1

Link 1 Wareham/Onset/Wareham

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Link 1	System Average
Avg. Daily Weekday Ridership	157	64
Avg. Saturday Ridership	135	64
Sunday Ridership	N/A	N/A
Passengers/Hr	16.2	9.7
Saturday Passengers/Hr	15.7	10.6
Sunday Passengers/Hr	N/A	N/A

Financials	Link 1	System Average (Southeast)
Farebox Recovery	11.6%	8.2%
Weekday Subsidy per passenger	$4.38	$11.30
Saturday Subsidy per passenger	$4.54	$8.14
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Southeast

Route Ranking: 5/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	14.1 miles	11.6 miles
Route Run—Time	60 min.	50 min.
Weekday Headway (min)	60 min	60 min. (30 mid day summer)
Saturday Headway (min)	60 min.	60 min.
Sunday Headway (min)	N/A	60 min.
Hours of Operations M-F	7:55 AM – 5:45 PM	7:55 AM – 9:45 PM
Hours of Operation Saturday	8:55 AM – 5:30 PM	8:55 AM – 5:30 PM 7:55 AM - 9:45 PM (summer)
Hours of Operation Sunday	N/A	8:55 AM – 5:30 PM

Route Alignment Changes:

Link 1 would travel from the MBTA Station to Cromesett and Swifts Beach via Marion Rd. and Swifts Beach Rd. It would then travel to Onset Village via Minot Ave. and Onset Ave., serve Cranberry Plaza via Main Ave. and return to the MBTA station via Depot St. and Minot Ave.

Phase 1:

-Service to Wareham Town Center $0

Phase 2:

-Additional summer service +$26,000

Phase 3:

-Implement Sunday service +$81,000

-Implement night service +$123,000

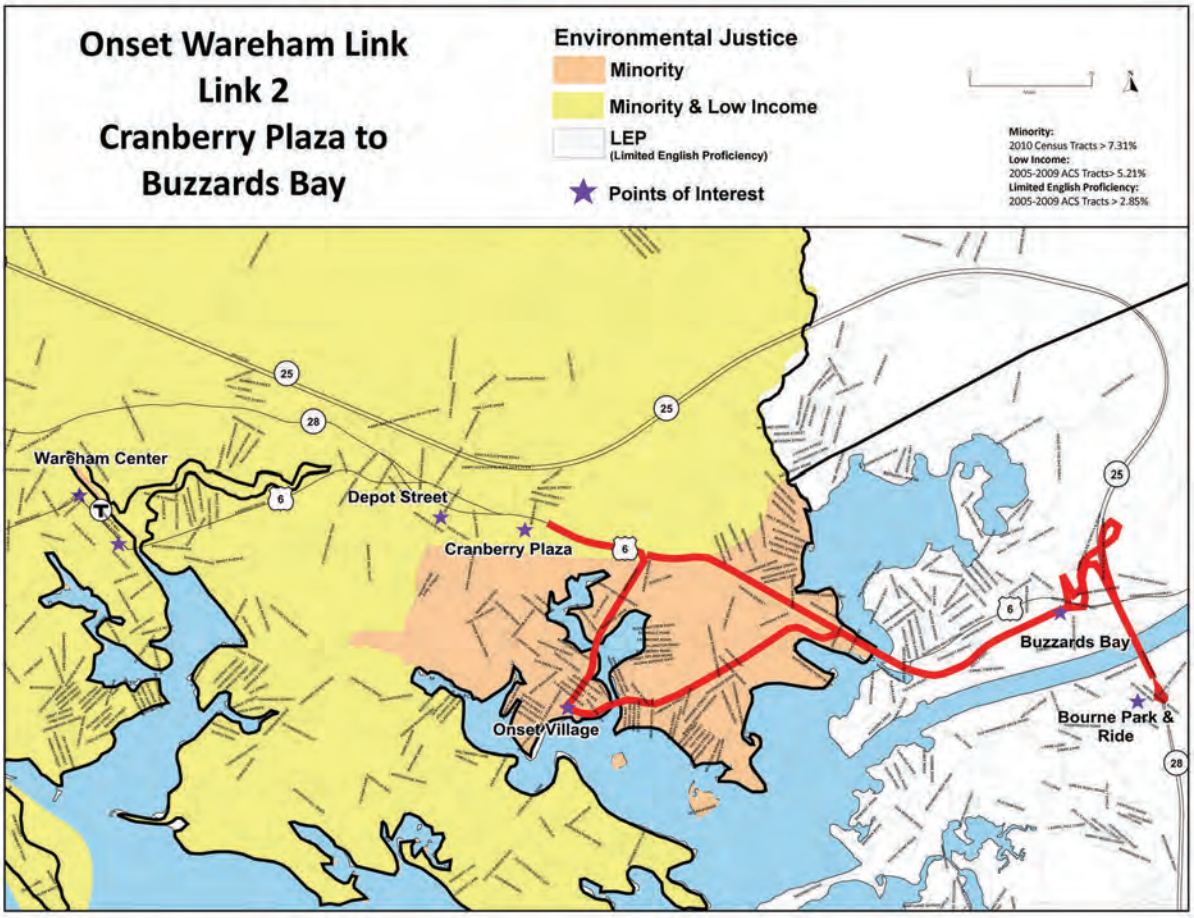
ADA Impact:

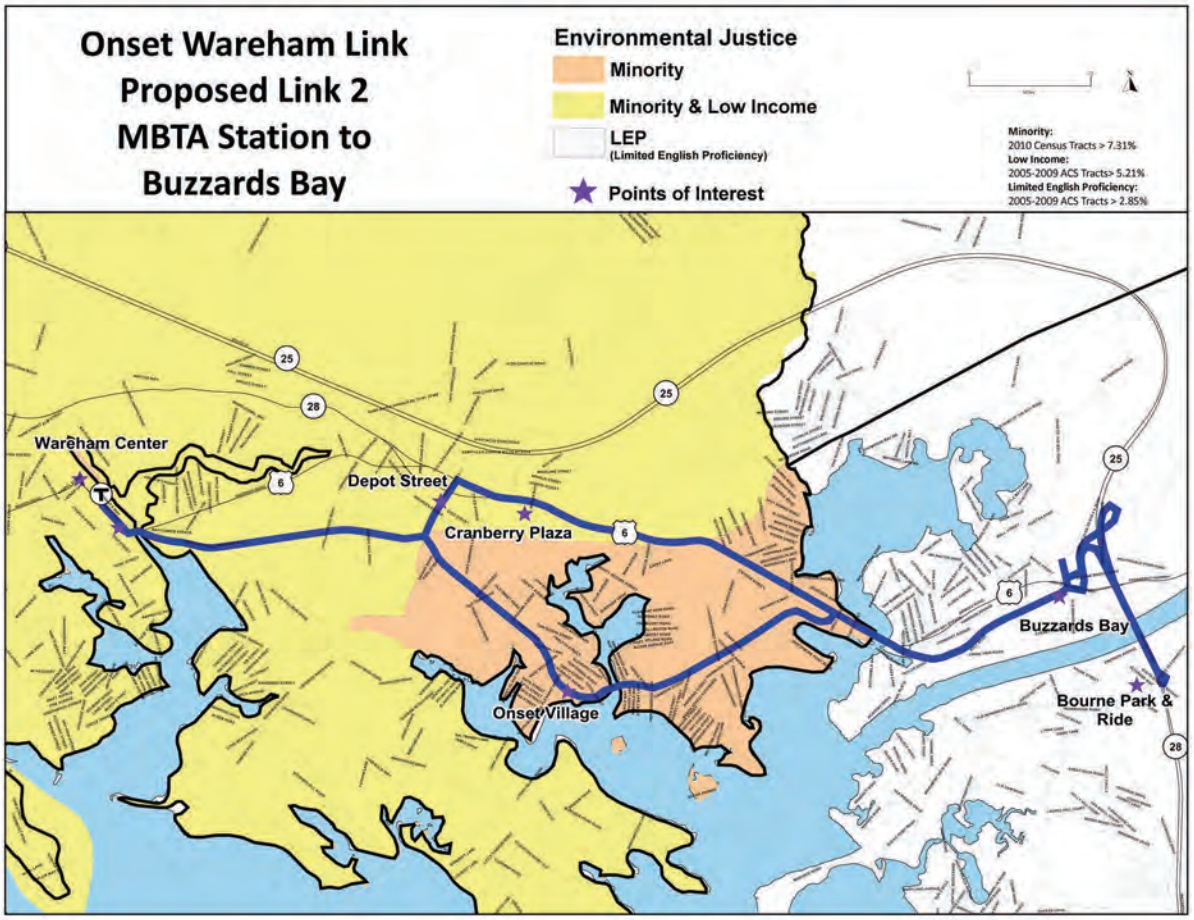
There will be no impact on ADA service.

Other Notes:

This route is essentially remaining the same with added service on Depot Street. The route would also be interlined with the Route 2.

In Phase 2, additional service will be added midday to create 30 minute frequencies during the summer only.


Onset Wareham Link
Link 2
Cranberry Plaza to
Buzzards Bay
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Wareham Center
Depot Street
Cranberry Plaza
Onset Village
Buzzards Bay
Bourne Park & Ride


Onset Wareham Link
Proposed Link 2
MBTA Station to
Buzzards Bay
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Wareham Center
Depot Street
Cranberry Plaza
Onset Village
Buzzards Bay
Bourne Park & Ride

Link 2

Link 2 Cranberry Plaza to Buzzards Bay

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Link 2	System Average (Southeast)
Avg. Daily Weekday Ridership	76	64
Avg. Saturday Ridership	29	64
Sunday Ridership	N/A	N/A
Passengers/Hr	7.9	9.7
Saturday Passengers/Hr	6.3	10.6
Sunday Passengers/Hr	N/A	N/A

Financials	Link 2	System Average (Southeast)
Farebox Recovery	5.6%	8.2%
Weekday Subsidy per passenger	$9.57	$11.30
Saturday Subsidy per passenger	$12.14	$8.14
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Southeast

Route Ranking: 20/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	13.8 miles	18.2 miles
Route Run—Time	60 min.	70 min.
Weekday Headway	60 min.	60 min. (30 min. summer)
Saturday Headway	120 min.	120 min. (60 min. summer)
Sunday Headway	N/A	120 min. (60 min. summer)
Hours of Operations M-F	7:55 AM – 5:30 PM	7:55 AM – 9:30 PM
Hours of Operation Saturday	8:55 AM – 5:30 PM	8:55 AM – 5:30 PM
Hours of Operation Sunday	N/A	8:55 AM – 5:30 PM

Route Alignment Changes:

Link 2 would travel from the MBTA station to Cranberry Plaza via Minot Ave. and Depot St. From Cranberry Plaza it would travel into Bourne to the Park and Ride lot via Cranberry Highway—Main St.—Route 28. From Bourne it would return to the MBTA station via Main St.—Onset Ave.—Minot Ave.

Phase 1:

-Service to Wareham Town Center $0

Phase 2:

-Additional summer service +$26,000

Phase 3:

-Implement Sunday service +$42,000

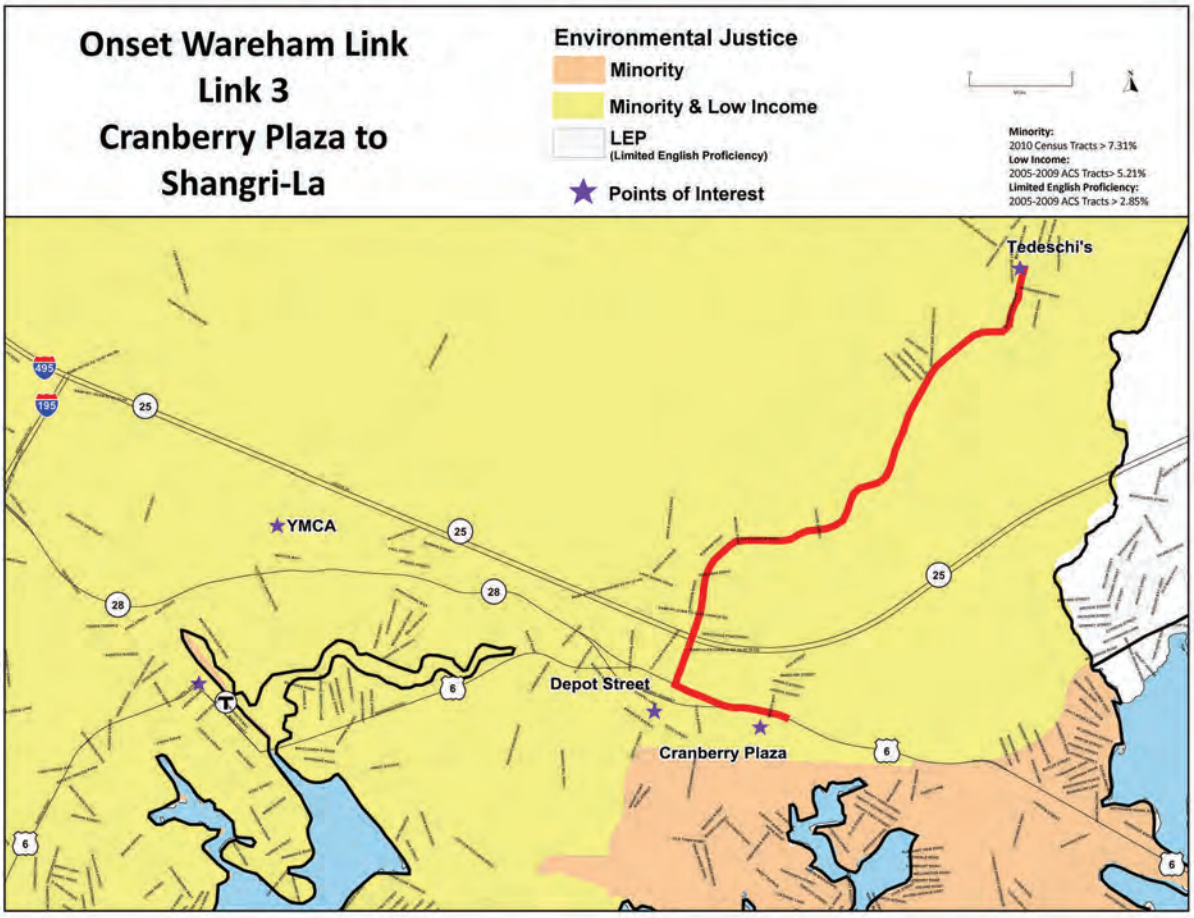
-Implement night service +$123,000

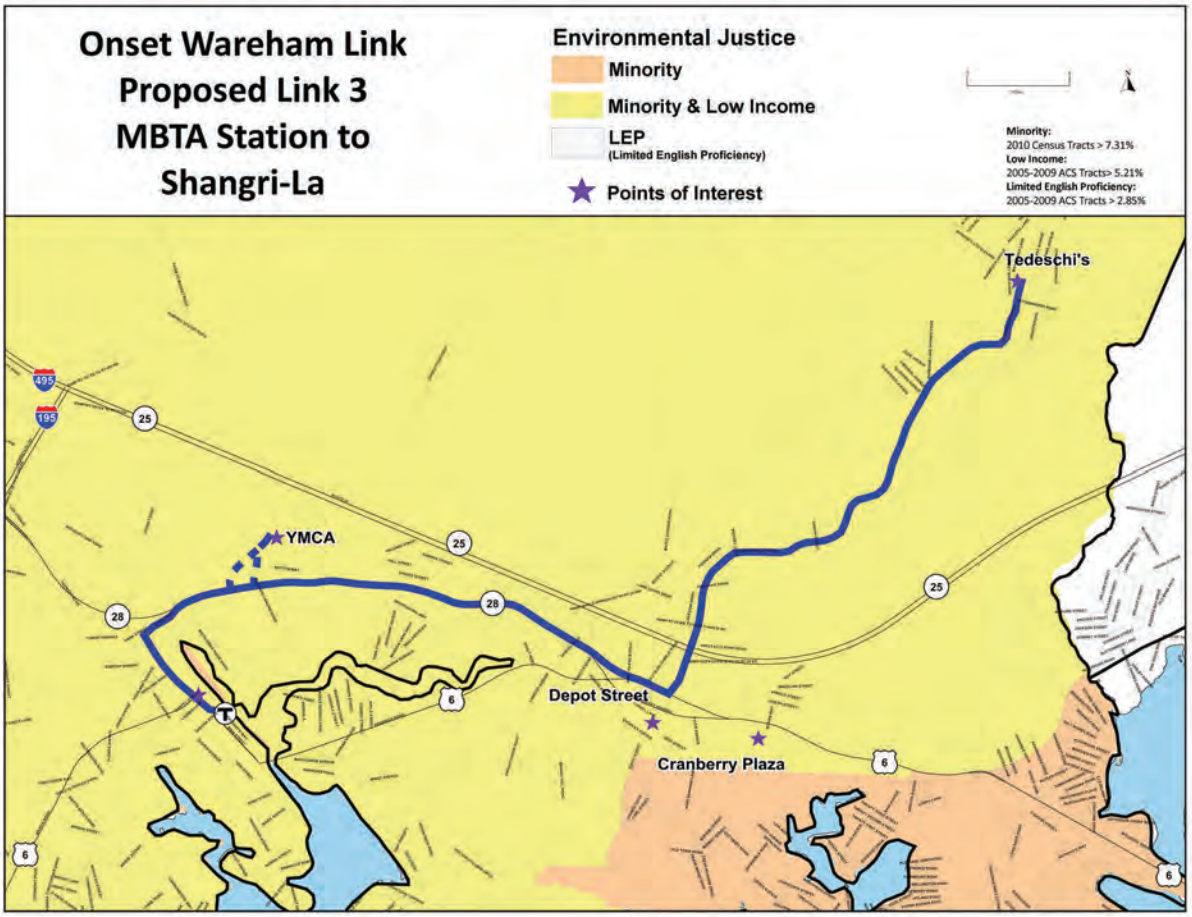
ADA Impact:

There will be no impact on ADA service.

Other Notes:

This route would be interlined with the Link 1 route on weekdays in order to provide 60 minute headways on both.


Onset Wareham Link
Link 3
Cranberry Plaza to
Shangri-La
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Tedeschi's
YMCA
Depot Street
Cranberry Plaza


Onset Wareham Link
Proposed Link 3
MBTA Station to
Shangri-La
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Tedeschi's
YMCA
Depot Street
Cranberry Plaza

Link 3

Link 3 Shangri-La to Cranberry Plaza

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Link 3	System Average (Southeast)
Avg. Daily Weekday Ridership	26	64
Avg. Saturday Ridership	N/A	64
Sunday Ridership	N/A	N/A
Passengers/Hr	15.6	9.7
Saturday Passengers/Hr	N/A	10.6
Sunday Passengers/Hr	N/A	N/A

Financials	Link 3	System Average (Southeast)
Farebox Recovery	11.1%	8.2%
Weekday Subsidy per passenger	$4.58	$11.30
Saturday Subsidy per passenger	N/A	$8.14
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Southeast

Route Ranking: 11/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Fri.	Mon.-Sun.
Route Length	6.5 miles	12.6 miles
Route Run—Time	25 min.	35 min.
Weekday Headway	60 min.	60 min.
Saturday Headway	N/A	60 min. (summer only)
Sunday Headway	N/A	60 min. (summer only)
Hours of Operations M-F	11:05 AM – 2:30 PM	9:05 AM – 4:30 PM
Hours of Operation Saturday	N/A	5.25 hrs (summer only)
Hours of Operation Sunday	N/A	12 hrs (summer only)

Route Alignment Changes:

Link 3 would travel from the MBTA station to Tedeschi's via Main St.—Cranberry Highway—Glen Charlie Rd. and return via the same route.

Phase 1:

-Service to Wareham Town Center $0

Phase 2:

-Additional summer service +$26,000

Phase 3:

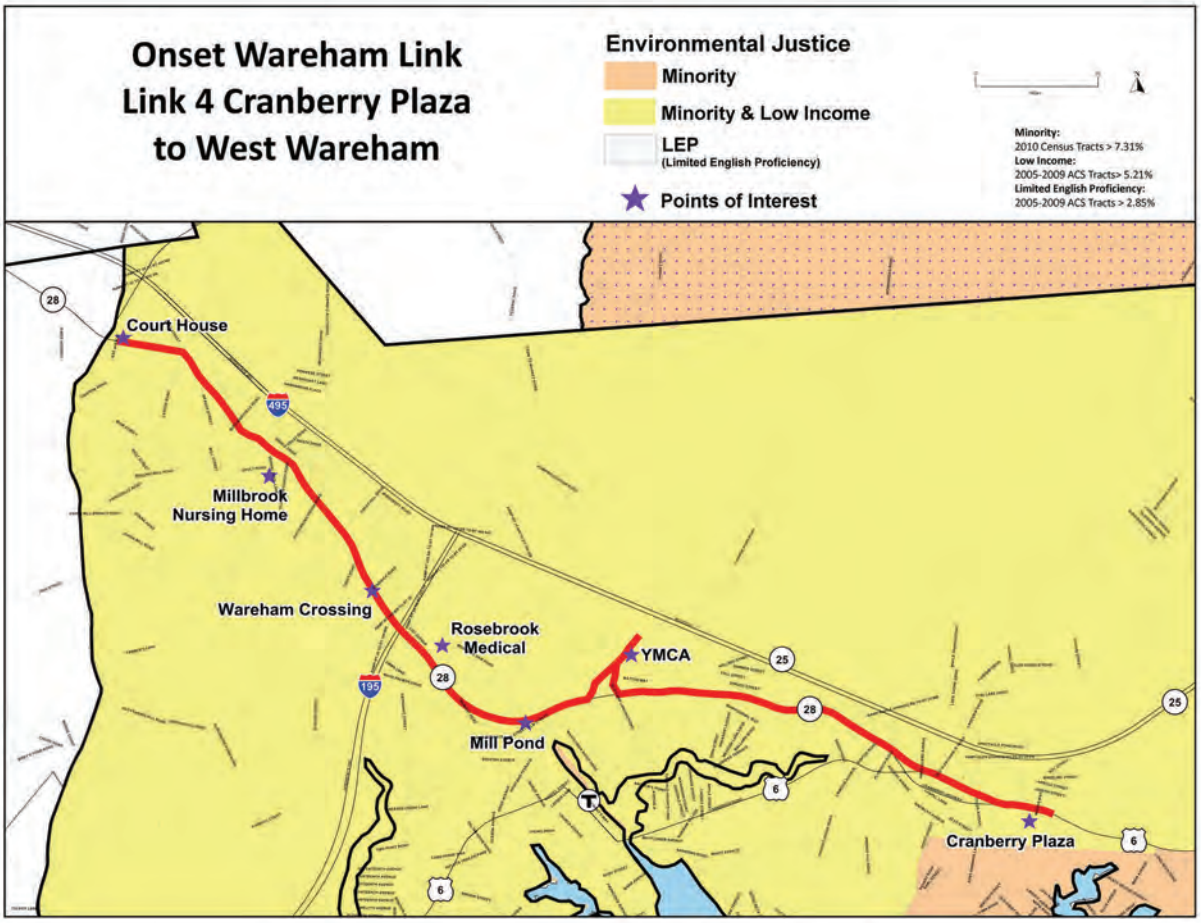
-Implement night service +$123,000

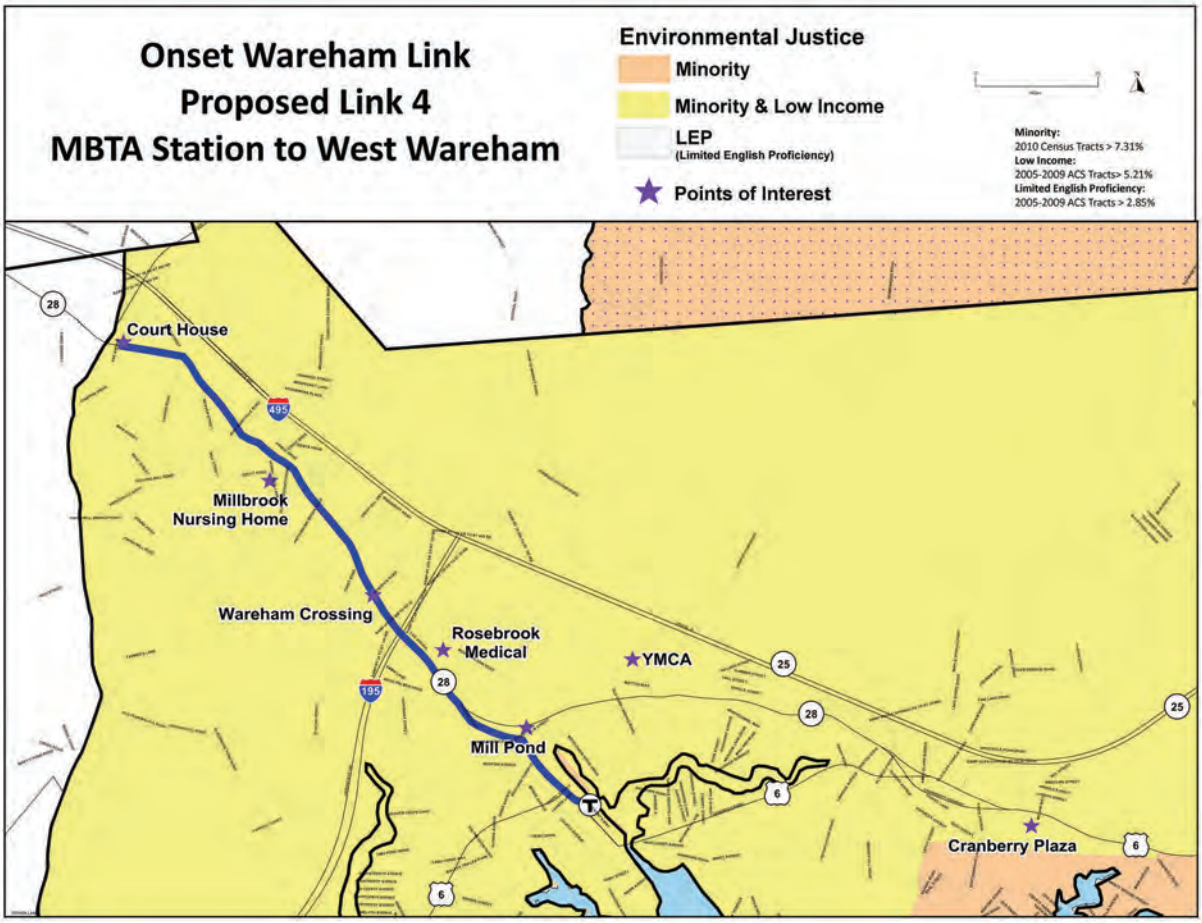
ADA Impact:

There will be no impact on ADA service.

Other Notes:

YMCA would be served on a deviation.


Onset Wareham Link
Link 4 Cranberry Plaza
to West Wareham
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Court House
Millbrook
Nursing Home
Wareham Crossing
Rosebrook
Medical
YMCA
Mill Pond
Cranberry Plaza
28
495
195
25
6


Onset Wareham Link
Proposed Link 4
MBTA Station to West Wareham
Environmental Justice
Minority
Minority & Low Income
LEP
(Limited English Proficiency)
Points of Interest
Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%
Court House
Millbrook
Nursing Home
Wareham Crossing
Rosebrook
Medical
YMCA
Mill Pond
Cranberry Plaza
28
495
195
25
6

Link 4

Link 4 Cranberry Plaza to West Wareham

REGIONAL TRANSIT PLAN
Greater Attleboro-Taunton Regional Transit Authority

Current Route Performance

Productivity	Link 4	System Average (Southeast)
Avg. Daily Weekday Ridership	53	64
Avg. Saturday Ridership	29	64
Sunday Ridership	N/A	N/A
Passengers/Hr	10.3	9.7
Saturday Passengers/Hr	9.7	10.6
Sunday Passengers/Hr	N/A	N/A

Financials	Link 4	System Average (Southeast)
Farebox Recovery	7.3%	8.2%
Weekday Subsidy per passenger	$7.27	$11.30
Saturday Subsidy per passenger	$7.75	$8.14
Sunday Subsidy per passenger	N/A	N/A

Route Type: Fixed Route, Southeast

Route Ranking: 17/30

Proposed Service Changes

	Current	Proposed
Days Operated	Mon.-Sat.	Mon.-Sun.
Route Length	13.0 miles	8.4 miles
Route Run—Time	40 min.	30 min.
Weekday Headway	60 min.	60 min. (30 min. summer)
Saturday Headway	60 min.	120 min (60 min. summer)
Sunday Headway	N/A	120 min (60 min. summer)
Hours of Operations M-F	7:15 AM – 5:45 PM	7:15 AM – 9:45 PM
Hours of Operation Saturday	9:30 AM – 4:15 PM	9:30 AM – 4:15 PM
Hours of Operation Sunday	N/A	9:30 AM—4:15 PM

Route Alignment Changes:

Link 4 would travel via Route 28 directly to the MBTA station.

Phase 1:

-Service to Wareham Town Center $0

Phase 2:

-Additional summer service +$26,000

Phase 3:

-Implement Sunday service +$28,000

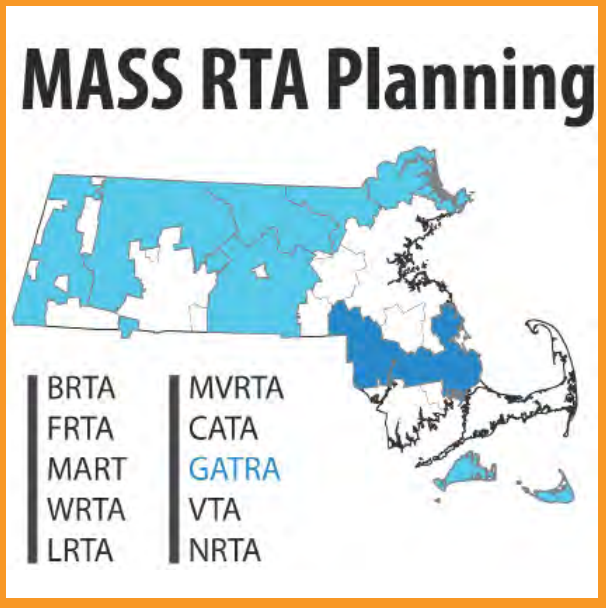
-Implement night service +$123,000

ADA Impact:

There will be no impact on ADA service.

Other Notes:

Frequency during the summer is improved.



Chapter 8

AECOM / URS
TMD
Burke & Company

GATRA
Greater Attleboro Taunton
Regional Transit Authority

8. CONCLUSION

The Greater Attleboro-Taunton Regional Transit Authority (GATRA) provides transit service to a population of approximately a half million people in a service area spanning 28 communities; GATRA provides fixed-route service to these communities with a fleet of 46 buses. GATRA operates local fixed-routes, commuter rail shuttles, dial-a-ride services, and ADA paratransit. There are 30 fixed routes which operate during the week, 22 of these run on Saturday, and only one operates on Sundays. Service hours vary by route and day but typically during the weekdays run from 5:30 AM to 7:00 PM and Saturdays 8:30AM to 5:00 PM. In FY 2014 GATRA provided over 855,000 passenger trips, this is up slightly from FY 2013 with 845,000 passenger trips. Average daily weekday system ridership is 3,000 passengers with the highest ridership occurring on Routes 8, 10 and 12.

Recommendations were developed using a cumulative process that incorporated public outreach meetings and neighborhood visits, a diverse steering committee, operational input from GATRA, an analysis of existing transit service and the Greater Attleboro-Taunton regional market. Strategies to improve the system were developed based on the goals and objectives outlined in Chapter 2. GATRA then presented the recommendations at a series of public outreach meetings between September 2014 and March 2015. They also distributed comment cards on the buses so that riders could provide feedback on their transit needs. This feedback will assist GATRA in allocating funding to the recommendations desired most by the public.

A three phase approach was used in designing recommendations. The three phase approach allows GATRA to plan for future service and seek the necessary funding and equipment that would be needed. Phase 1 recommendations could be implemented using existing equipment and with no increase in overall service cost. It is possible to begin implementing Phase 1 within one year. Although Phase 1 would not increase in funding, Phases 2 and 3 would require significantly more funding (Table 26). Phase 2 would require additional equipment which could take up to two years from the time procurement begins to when the vehicles are delivered; it is most likely that Phase 2 recommendations will not be implemented for several years. Phase 3 recommendations assume an unconstrained budget which would require increased revenues leveraged from local, state, and federal funding partners.

In Phase 1, underutilized routes are eliminated and routes are modified to improve efficiency. Several routes are extended to new service areas and some fixed routes are converted to deviated fixed routes. During Phase 2, new routes are implemented, service is expanded and summer service is improved. Finally in Phase 3, service is expanded by 4 hours on selected routes and service on Sundays is implemented on all GATRA routes. The North Bellingham T-Shuttle is expanded to provide all day service, and service is expanded on Plymouth Area Link routes.

These improvements will help GATRA achieve their goal of providing safe, courteous, cost-effective transportation to the people throughout the region. The proposed recommendations will help improve

mobility in the region through expanding service to new areas, extending service hours, and improving frequency. Eliminating underutilized or redundant routes will streamline GATRA's service. Adjusting route alignments and expanding service to new areas will effectively meet the transit needs of GATRA passengers. These recommendations will help GATRA match demand with service levels and develop corridors for growth.

Table 26. Phase Requirements

Phase	Additional funding needed	Cost of service	Percent increase from previous
Phase 1	$0[20]	$13,358,000	0%[20]
Phase 2	$784,000	$14,142,000	5.87%
Phase 3	$6,784,000	$20,926,000	47.97%
Total	$7,568,000	N/A	56.17%

GATRA currently has service guidelines that they use to evaluate a route's health; the following describes proposed modifications to their existing performance measures.

- **Passengers/Hour:** Number of total monthly and annual passengers divided by the corresponding revenue-hours.
- **Subsidy/Passenger:** Total expenses minus fare revenue divided by ridership.
- **Farebox Recovery:** The percentage of operating costs covered by fares collected, calculated by the fares collected divided by the cost to operate the route.
- **Cost/Revenue-Hour:** An excellent indicator of efficiency is cost per revenue-hour of service. Costs per hour should be analyzed by route and compared to overall system averages.
- **Late Trips:** The percentage of fixed-route trips which operate late or are missed should be recorded and reported. The recommended standard for late trips is any trip that is more than five minutes behind schedule.
- **Service/Road Calls:** the number of service/road calls divided by the number of revenue miles. This measure is typically measured for the entire system and not individual routes. This monitors routine maintenance and vehicle performance.
- **Accidents/100,000 miles:** Measure of driver safety. There must be a standard practice for defining what an accident is.

The performance measures can be used to create benchmarks for service operation. The benchmarks will help GATRA track progress and set goals for the performance of the route. They will also assist GATRA in measuring the impact of the proposed recommendations on service. The recommendations include modifying the alignment of several routes in order to provide better connections, eliminating redundancy and servicing developing areas as well as creating new routes (Table 27).

[20] Cost projected to decrease by $116,000.

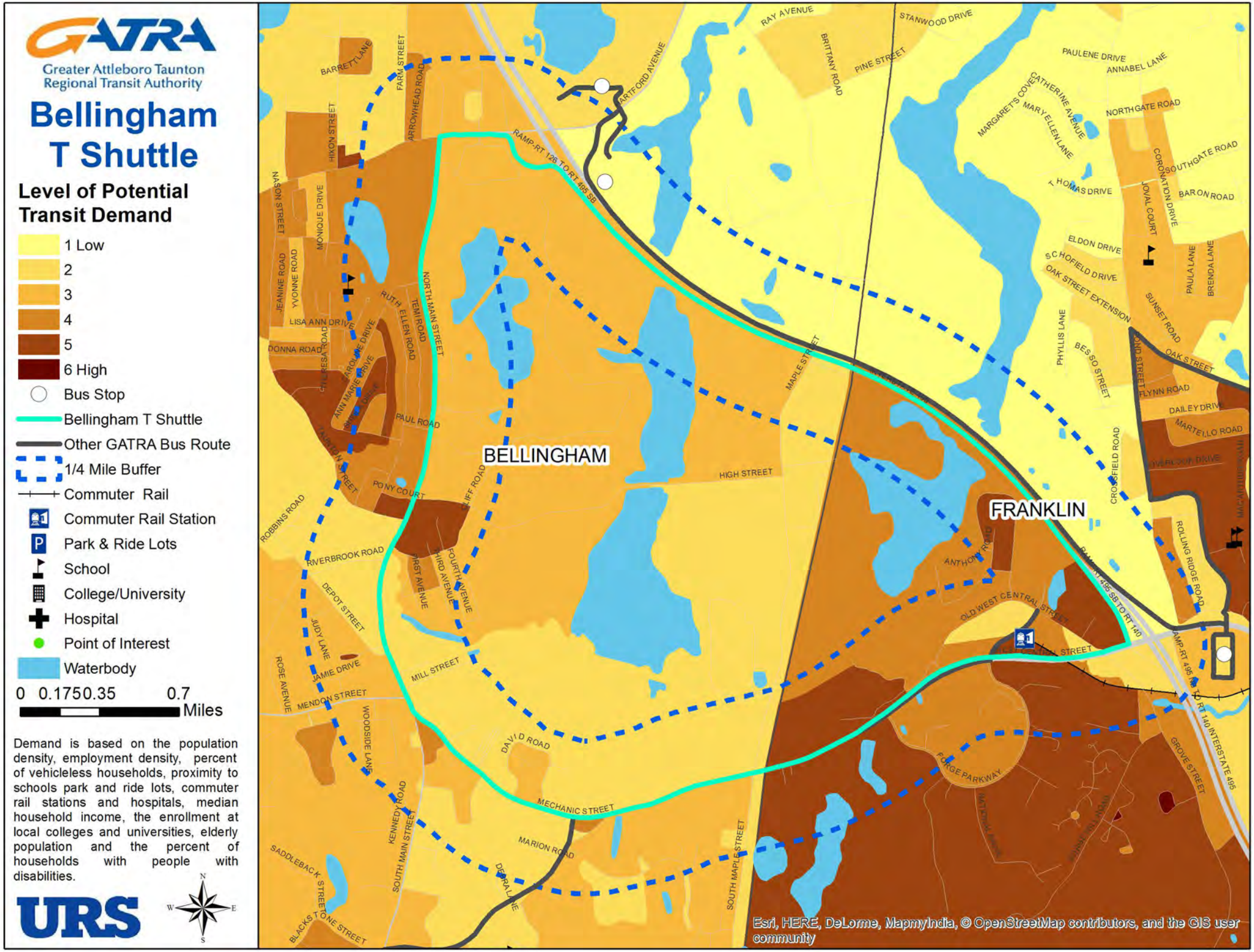
Table 27. Summary of Recommendations

Bus Route	Alignment Change	Service Change
Mansfield/Foxborough/ Plainville	A new route would be created between the Mansfield MBTA station and the Plainridge Park Casino and serve Patriot Place.	New route
Medway T-Shuttle 2	Additional shuttle from the West Medway Fire Station to the Medway T	None
FAB - Franklin Area Bus	Modify route to serve the YMCA and Magnolia Heights. YMCA on select trips only	Add Sunday service and night service
North Bellingham T-Shuttle	Service Market Basket/Walmart as well as to Village Plaza in Franklin.	Pilot Mid-day service and add weekend service
Route 1 - Westside	Route 1 would serve Hannaford Supermarket rather than the closed Shaw's.	Add Sunday service and night service
Route 2 -Taunton/Raynham	Create a new route to service Raynham Council on Aging via rt 138 Walmart and Market Basket.	New route
Route 6 - Whittendon	Extend route to serve Perkins with a deviation.	Add Sunday service and night service
Route 7 - School Street/Raynham	Service to Pine Hill Estates would be eliminated and add new service to Cape Roads Plaza.	Add Sunday service and night service
Route 8 – East Taunton/ Raynham/Wal-Mart	Add a deviation to serve Pine Hills via deviation	Add Sunday service and night service
Route 9 - Weir/ Route 138	Extend route to serve Highland Street, Hannaford Supermarket and return to the GATRA terminal via Route 44.	Add Sunday service and night service
Route 18 - Taunton/Norton/Attleboro	Realign the route to serve Sensata Technologies	Add Sunday service and night service
Route 24 - Attleboro/Pawtucket, RI	Route 24 would be reroute to service County Street to US-1A, Bristol Place, and terminate at the Mayfair Plaza.	Add Sunday service and night service
Route 140 - Route 140/Wheaton T-Shuttle	Add a deviation to Serve the Cabot Industrial Park	Add a deviation to Serve the Cabot Industrial Park
Plainridge	Create a new route to serve the Plainridge Park Casino and Plainville Crossing	New route
MDS - Downtown Middleborough Shuttle	Extend route to serve Compass Medical and reroute to better serve Massasoit Community College	None

Link 1 Wareham/Onset/Wareham	**Realign Wareham Link 1 to originate in Wareham Town Center**	**Add Sunday service and night service. Increase summer service**
Link 2 Cranberry Plaza to Buzzards Bay	Realign Wareham Link 2 to originate in Wareham Town Center	Add Sunday service and night service. Increase summer service
Link 3 Shangri-La to Cranberry Plaza	Realign Wareham Link 3 to originate in Wareham Town Center	Increase service hours, add more summer service
Link 4 Cranberry Plaza to West Wareham	Realign Wareham Link 4 to originate in Wareham Town Center	Add Sunday service and night service. Increase summer service
M/C - Manomet/Cedarville	Extend the route north to operate a portion of the Mayflower Link.	Add Sunday service and night service
Mayflower Link	Shorten route and terminate at Plimouth Plantation.	Add Sunday service and night service
Scituate Shuttle	A new in-town shuttle would be created within Scituate.	New route
Hanover/Pembroke	Create a new route to serve the Town of Hanover	New route
SAIL South - Marshfield/Kingston/ Duxbury	Split the SAIL Route into two shorter routes. This part is from the Marshfield senior center to Independence Mall	Add Sunday service and night service
SAIL North - Marshfield/Kingston/ Duxbury	Split the SAIL Route into two shorter routes. This part is from the Marshfield senior center to Stop and Shop	Add Sunday service and night service
Freedom	No changes	Sunday and late night service. Improved summer service
Liberty	No changes	Sunday and late night service. Improved summer service
Route 3 - Silver City	Eliminate route, duplicative and low performing	Eliminate route
Route 10 - Attleboro/ North Attleboro	None	Add Sunday service and night service
Route 11 - South Attleboro Connector	None	Add Sunday service and night service
Route 12 - Attleboro/ So. Attleboro/ No. Attleboro	None	Add Sunday service and night service
Route 14 - Attleboro/ No. Attleboro/Plainville	None	Add Sunday service and night service

Route 15 - Oak Hill	None	Add Sunday service and night service
Route 16 - Attleboro/Seekonk	None	Add Sunday service and night service
Wareham/Middleborough/ Lakeville Train Connector	Service to Wareham center	None
South Bellingham T- shuttle	None	None
Tri-Town Connector	None	Add Sunday service and night service

Appendix A
Market Demand Maps


GATRA
Greater Attleboro Taunton Regional Transit Authority
Bellingham T Shuttle
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Bellingham T Shuttle
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.175 0.35 0.7 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
BELLINGHAM
FRANKLIN
RAMP-RT 126 TO RT 495 SB
RAMP-RT 495 SB TO RT 140
RAMP-RT 495 NB TO RT 140/INTERSTATE 495
HARTFORD AVENUE
RAY AVENUE
STANWOOD DRIVE
BRITTANY ROAD
PINE STREET
PAULENE DRIVE
ANNABEL LANE
MARGARET'S COVE
CATHERINE AVENUE
MARY ELLEN LANE
NORTHGATE ROAD
SOUTHGATE ROAD
CORONATION DRIVE
JOVAL COURT
BARON ROAD
ELDON DRIVE
SCHOFIELD DRIVE
OAK STREET EXTENSION
PAULA LANE
BRENDA LANE
SUNSET ROAD
OAK STREET
FLYNN ROAD
DAILEY DRIVE
MARTELLO ROAD
PHYLLIS LANE
BESSO STREET
CROSSFIELD ROAD
ROLLING RIDGE ROAD
BARRETT LANE
FARM STREET
ARROWHEAD ROAD
HIXON STREET
NASON STREET
MONIQUE DRIVE
JEANINE ROAD
YVONNE ROAD
LISA ANN DRIVE
DONNA ROAD
GILDRESA ROAD
CARROLL DRIVE
ANN MARIE DRIVE
RUTH ELLEN ROAD
TEMI ROAD
NORTH MAIN STREET
PAUL ROAD
LAUREN STREET
PONY COURT
CLIFF ROAD
HIGH STREET
MAPLE STREET
ROBBINS ROAD
RIVERBROOK ROAD
DEPOT STREET
JUDY LANE
JAMIE DRIVE
ROSE AVENUE
MENDON STREET
FIRST AVENUE
THIRD AVENUE
FOURTH AVENUE
MILL STREET
WOODSIDE LANE
KENNEDY ROAD
SOUTH MAIN STREET
DAVID ROAD
MECHANIC STREET
MARION ROAD
DEBRA LANE
SADDLEBACK STREET
BLACKSTONE STREET
SOUTH MAPLE STREET
ANTHONY ROAD
OLD WEST CENTRAL STREET
FORGE PARKWAY
GROVE STREET
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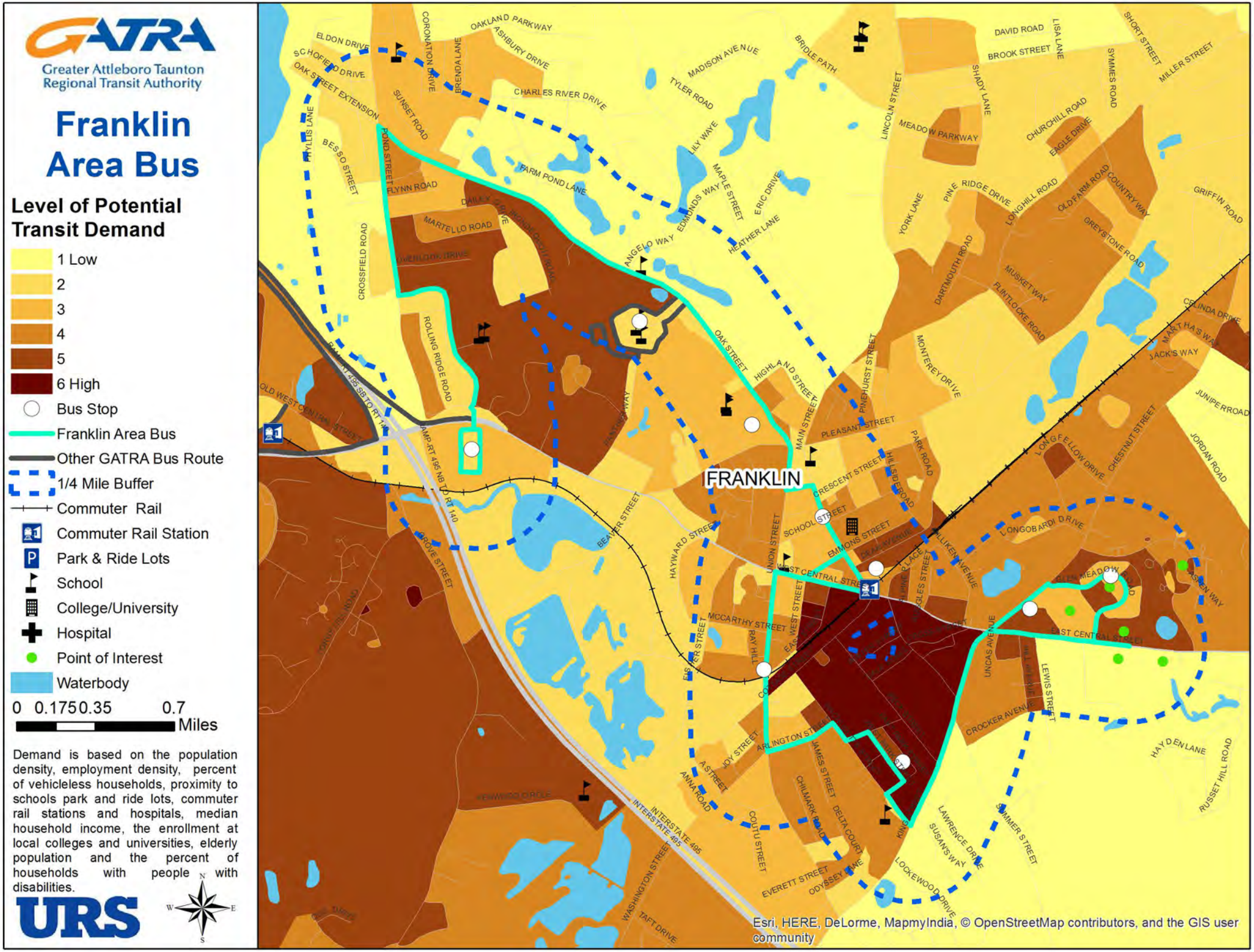
GATRA
Greater Attleboro Taunton Regional Transit Authority
Franklin Area Bus
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Franklin Area Bus
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.175 0.35 0.7
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
FRANKLIN
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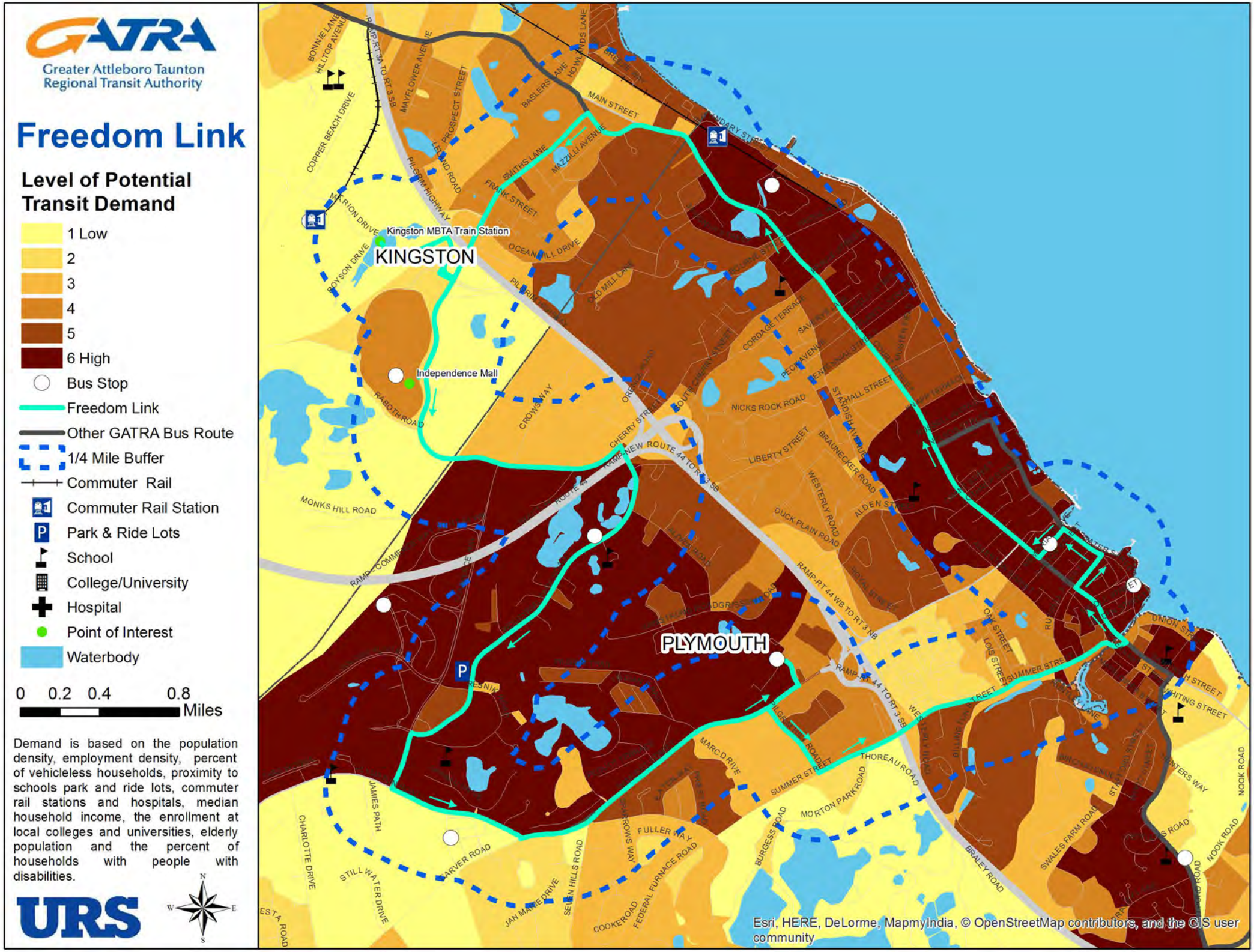
GATRA
Greater Attleboro Taunton Regional Transit Authority
Freedom Link
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Freedom Link
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.2 0.4 0.8 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
Kingston MBTA Train Station
KINGSTON
Independence Mall
PLYMOUTH
MAIN STREET
MARION DRIVE
POYSON DRIVE
COPPER BEACH DRIVE
PILGRIM HIGHWAY
OCEAN HILL DRIVE
CROWN WAY
RABOTH ROAD
MONKS HILL ROAD
CHERRY STREET
NICKS ROCK ROAD
LIBERTY STREET
DUCK PLAIN ROAD
WESTERLY ROAD
BRAUNECKER ROAD
CORDAGE TERRACE
PEQUOD AVENUE
STANDISH AVENUE
STANDISH STREET
OLD MILL LANE
SMITHS LANE
FRANK STREET
MAZZILLI AVENUE
PROSPECT STREET
LEYLAND ROAD
BASLERS LANE
HOWLANDS LANE
MAYFLOWER AVENUE
BONNIE LANE
HILLTOP AVENUE
RAMP-RT 3A TO RT 3 SB
RAMP-NEW ROUTE 44 TO RT 3 SB
RAMP-RT 44 WB TO RT 3 NB
RAMP-RT 44 TO RT 3 SB
RAMP-COMMERCE
ROUTE 44
JAMIES PATH
CHARLOTTE DRIVE
STILL WATER DRIVE
CARVER ROAD
JAN MARIE DRIVE
SEVEN HILLS ROAD
COOKE ROAD
FEDERAL FURNACE ROAD
FULLER WAY
BARROWS WAY
MARC DRIVE
SUMMER STREET
THOREAU ROAD
MORTON PARK ROAD
BURGESS ROAD
BRALEY ROAD
SWALES FARM ROAD
NOOK ROAD
WINTERS WAY
WHITING STREET
UNION STREET
OAK STREET
LOIS STREET
SUMMER STREET
WEST PLYMOUTH ROAD
ESTA ROAD
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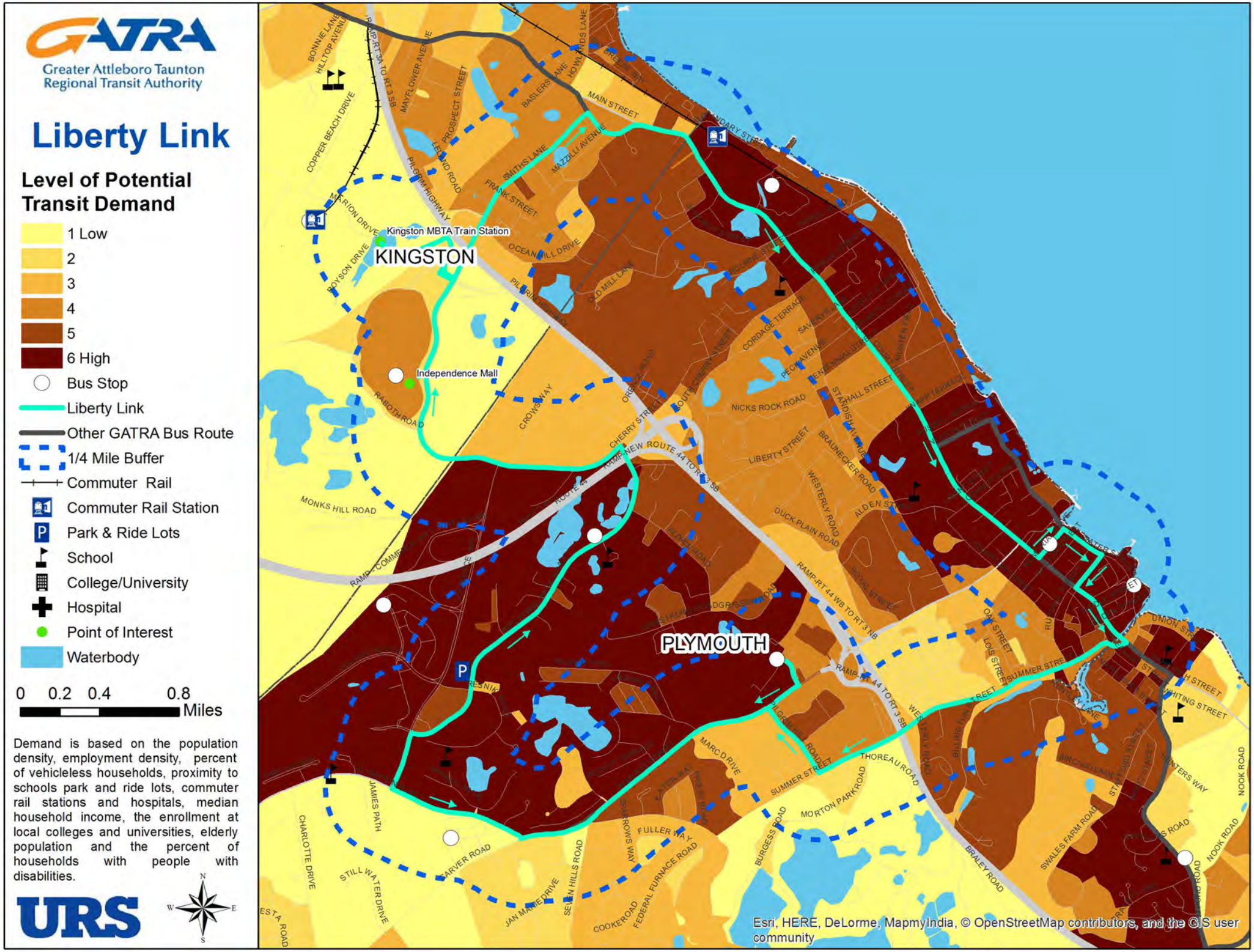
GATRA
Greater Attleboro Taunton Regional Transit Authority
Liberty Link
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Liberty Link
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.2 0.4 0.8 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
KINGSTON
PLYMOUTH
Kingston MBTA Train Station
Independence Mall
COPPER BEACH DRIVE
MARION DRIVE
POYSON DRIVE
PILGRIM HIGHWAY
MAYFLOWER AVENUE
PROSPECT STREET
LEYLAND ROAD
BASLERS LANE
HOWLANDS LANE
MAIN STREET
SMITHS LANE
FRANK STREET
MAZZILLI AVENUE
OCEAN HILL DRIVE
OLD MILL LANE
CORDAGE TERRACE
PECK AVENUE
NICKS ROCK ROAD
STANDISH AVENUE
LIBERTY STREET
BRAUNECKER ROAD
WESTERLY ROAD
DUCK PLAIN ROAD
ALDEN STREET
CROWN WAY
RABOTH ROAD
MONKS HILL ROAD
CHERRY STREET
RAMP-NEW ROUTE 44 TO RT 3 SB
RAMP-RT 44 WB TO RT 3 NB
RAMP-RT 44 TO RT 3 SB
MARC DRIVE
SUMMER STREET
THOREAU ROAD
MORTON PARKROAD
BURGESS ROAD
BRALEY ROAD
SWALES FARM ROAD
NOOK ROAD
WHITING STREET
WINTERS WAY
JAMIES PATH
CHARLOTTE DRIVE
STILL WATER DRIVE
CARVER ROAD
JAN MARIE DRIVE
SEVEN HILLS ROAD
COOKEROAD
FEDERAL FURNACE ROAD
FULLER WAY
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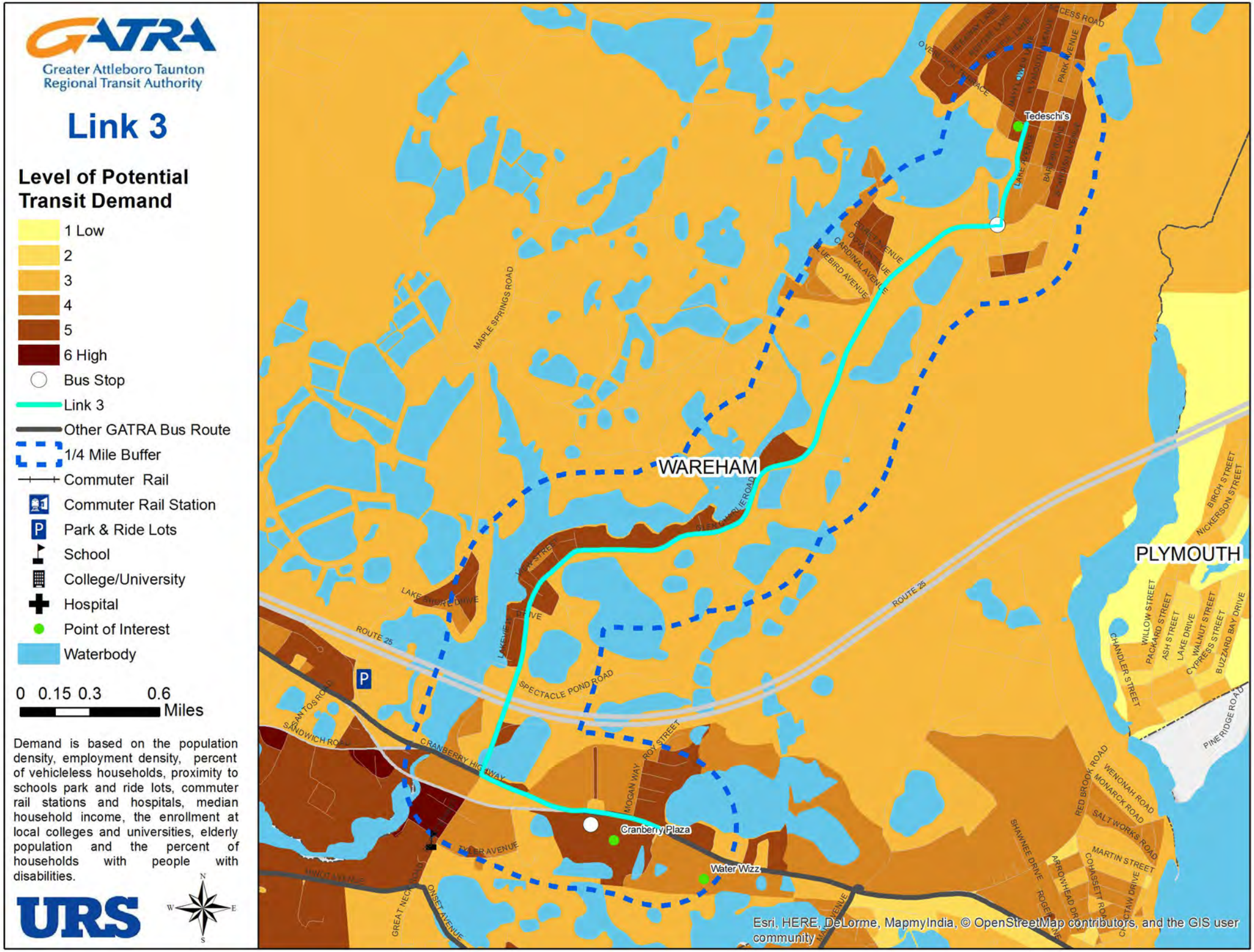
GATRA
Greater Attleboro Taunton Regional Transit Authority
Link 3
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Link 3
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.15 0.3 0.6
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
WAREHAM
PLYMOUTH
Tedeschi's
Cranberry Plaza
Water Wizz
MAPLE SPRINGS ROAD
CARDINAL AVENUE
BLUEBIRD AVENUE
ROUTE 25
SPECTACLE POND ROAD
CRANBERRY HIGHWAY
SANDWICH ROAD
MOGAN WAY
ROY STREET
WATER AVENUE
ONSET AVENUE
GREAT NECK ROAD
LAKE AMORE DRIVE
LAKEVIEW DRIVE
MAIN STREET
OLD WAREHAM ROAD
PARK AVENUE
BIRCH STREET
NICKERSON STREET
WILLOW STREET
PACKARD STREET
ASH STREET
LAKE DRIVE
WALNUT STREET
CYPRESS STREET
BUZZARD BAY DRIVE
CHANDLER STREET
PINE RIDGE ROAD
RED BROOK ROAD
WENONAH ROAD
MONARCK ROAD
SALT WORKS ROAD
MARTIN STREET
COHASSETT ROAD
CHOCTAW DRIVE
SHAWNEE DRIVE
ARROWHEAD DRIVE
ROGERS AVENUE
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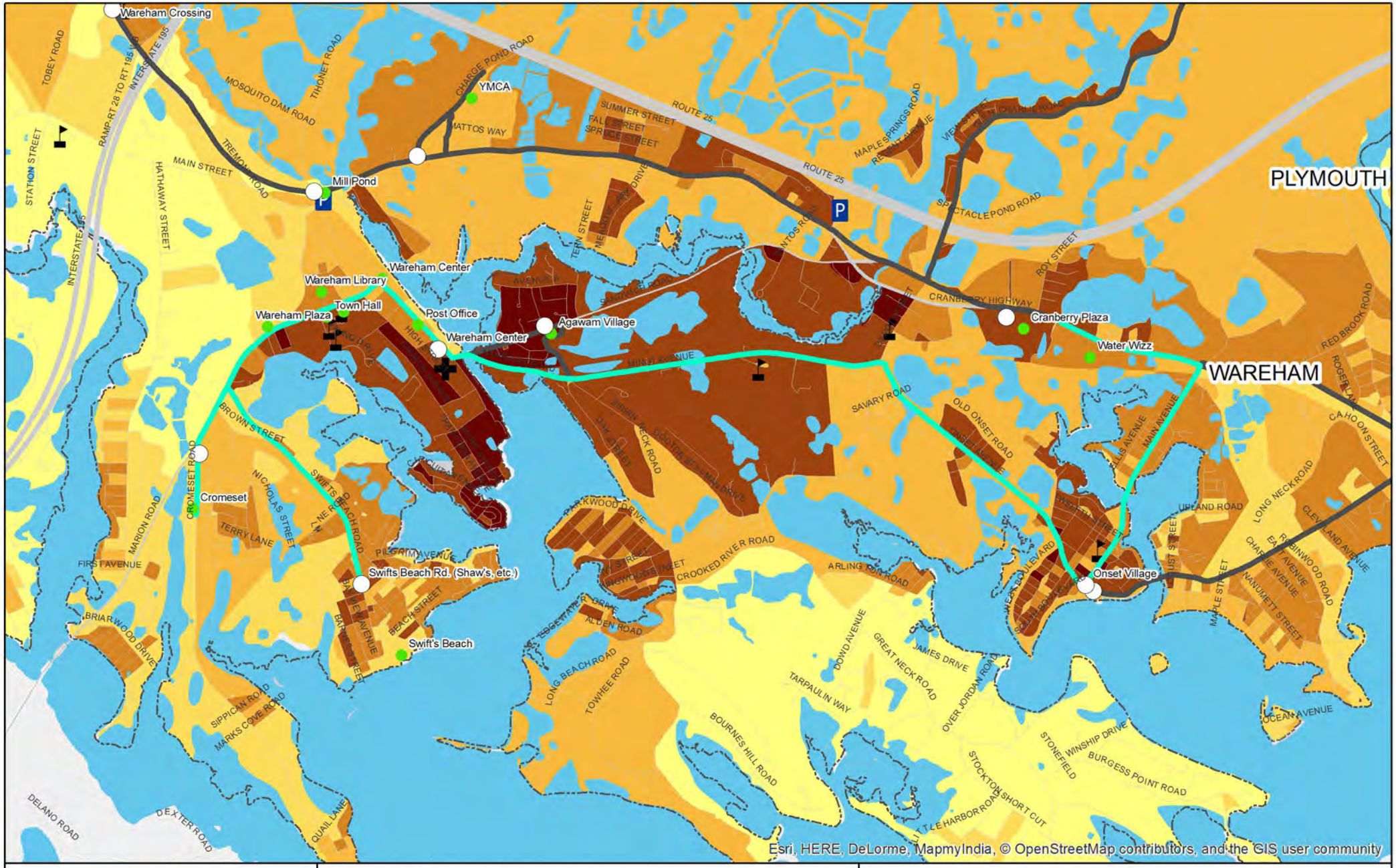


GATRA
Greater Attleboro Taunton Regional Transit Authority

Link 1

Level of Potential Transit Demand

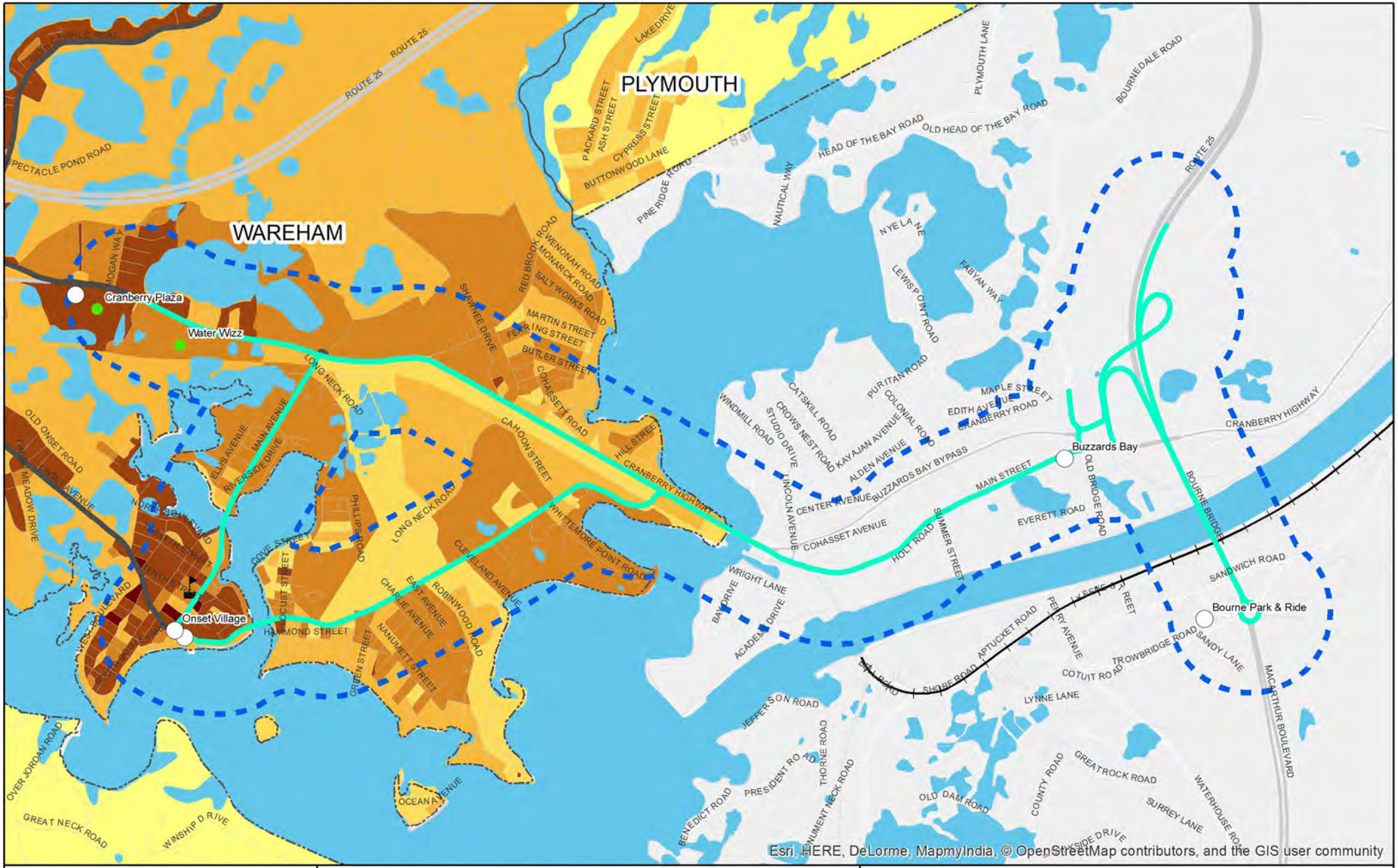
- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Link 1
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- Hospital
- Point of Interest
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.375 0.75 1.5 Miles

URS



GATRA
Greater Attleboro Taunton Regional Transit Authority

Link 2

Level of Potential Transit Demand

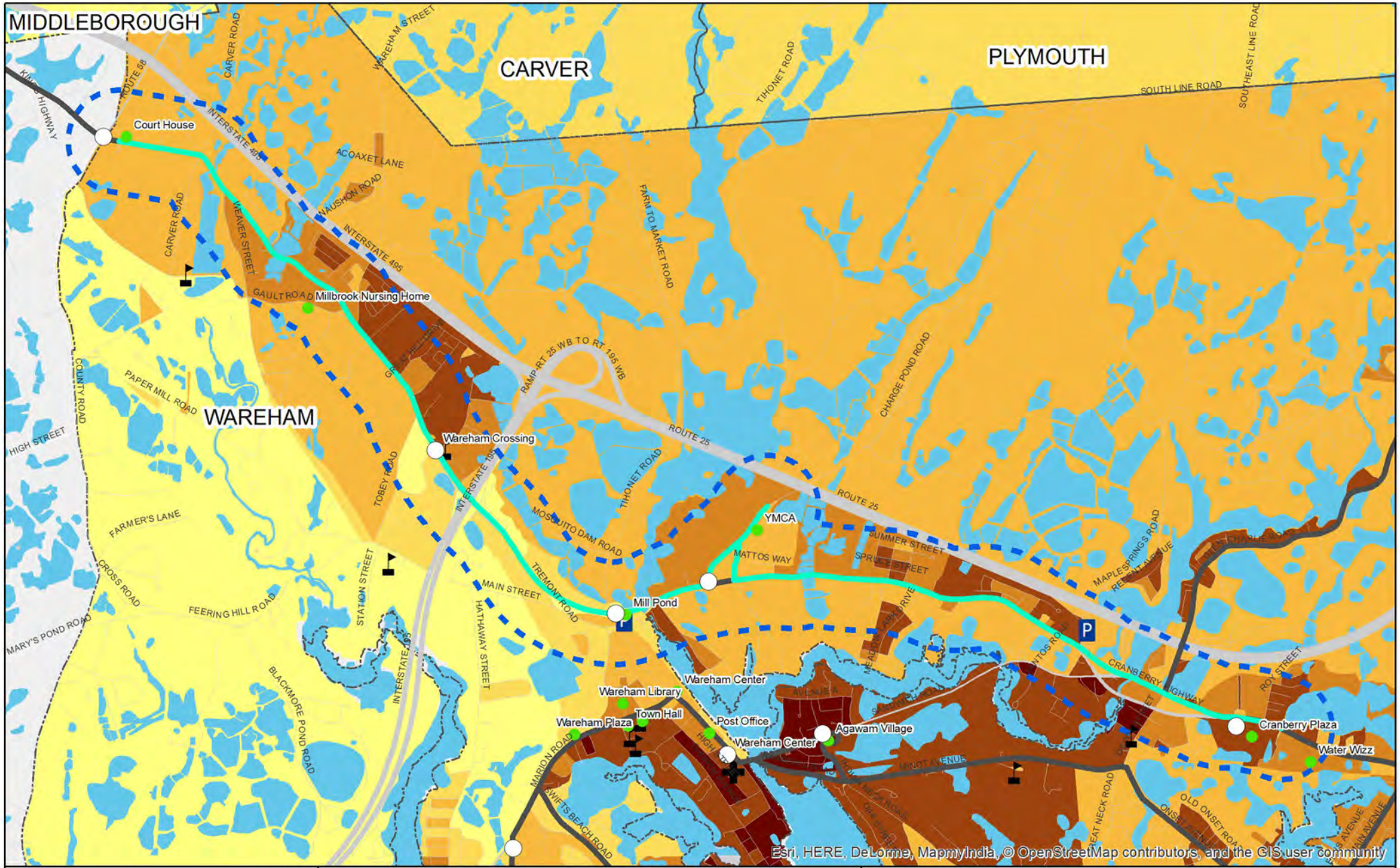
- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Link 2
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- Hospital
- Point of Interest
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.3 0.6 1.2 Miles

URS



GATRA

Greater Attleboro Taunton Regional Transit Authority

Link 4

Level of Potential Transit Demand

- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Link 4
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- Hospital
- Point of Interest
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.4 0.8 1.6 Miles

URS

GATRA
Greater Attleboro Taunton Regional Transit Authority

Mayflower Link

Level of Potential Transit Demand

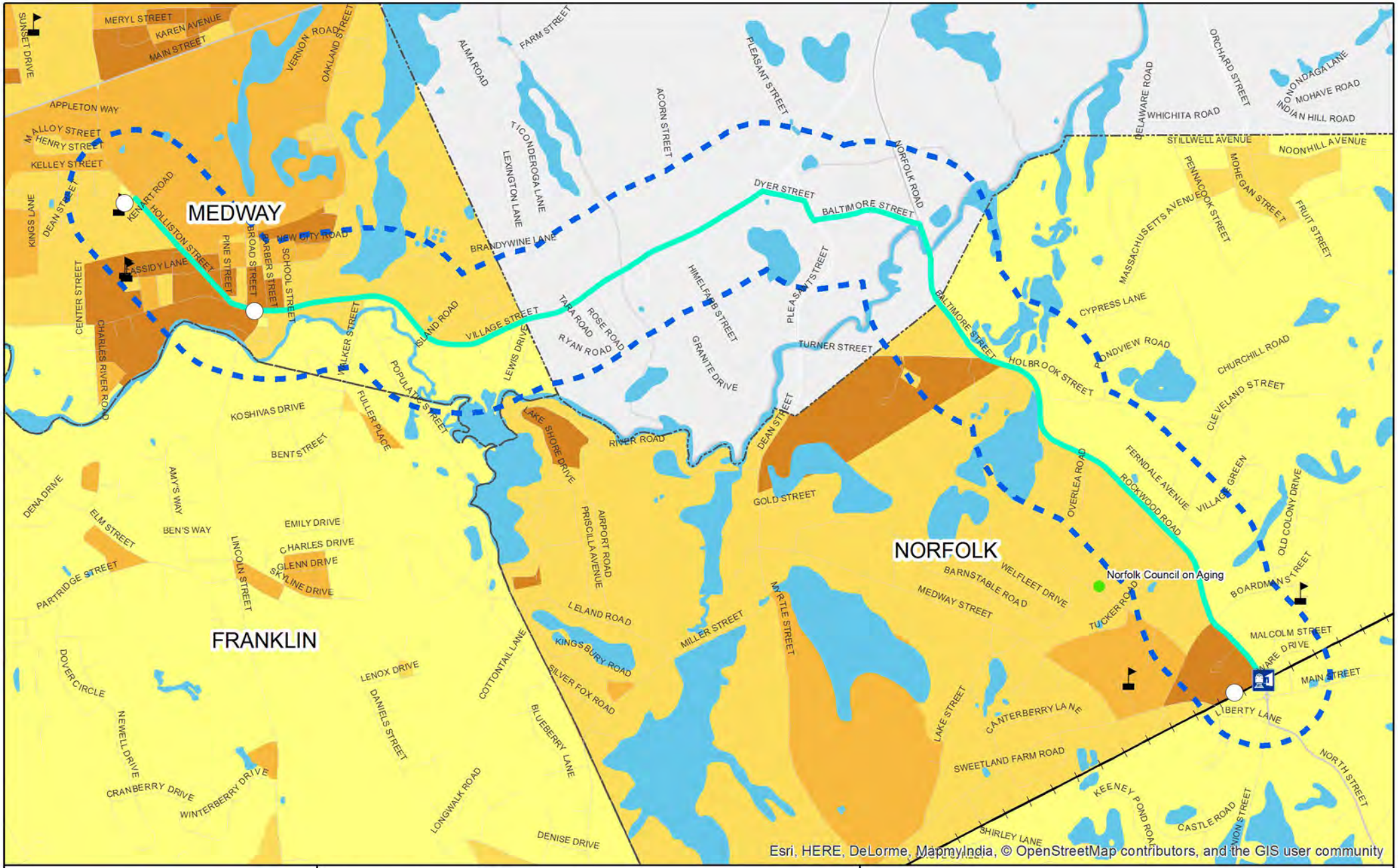
- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Mayflower Link
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- Hospital
- Point of Interest
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.45 0.9 1.8 Miles

URS



GATRA

Greater Attleboro Taunton Regional Transit Authority

Medway T Shuttle

Level of Potential Transit Demand

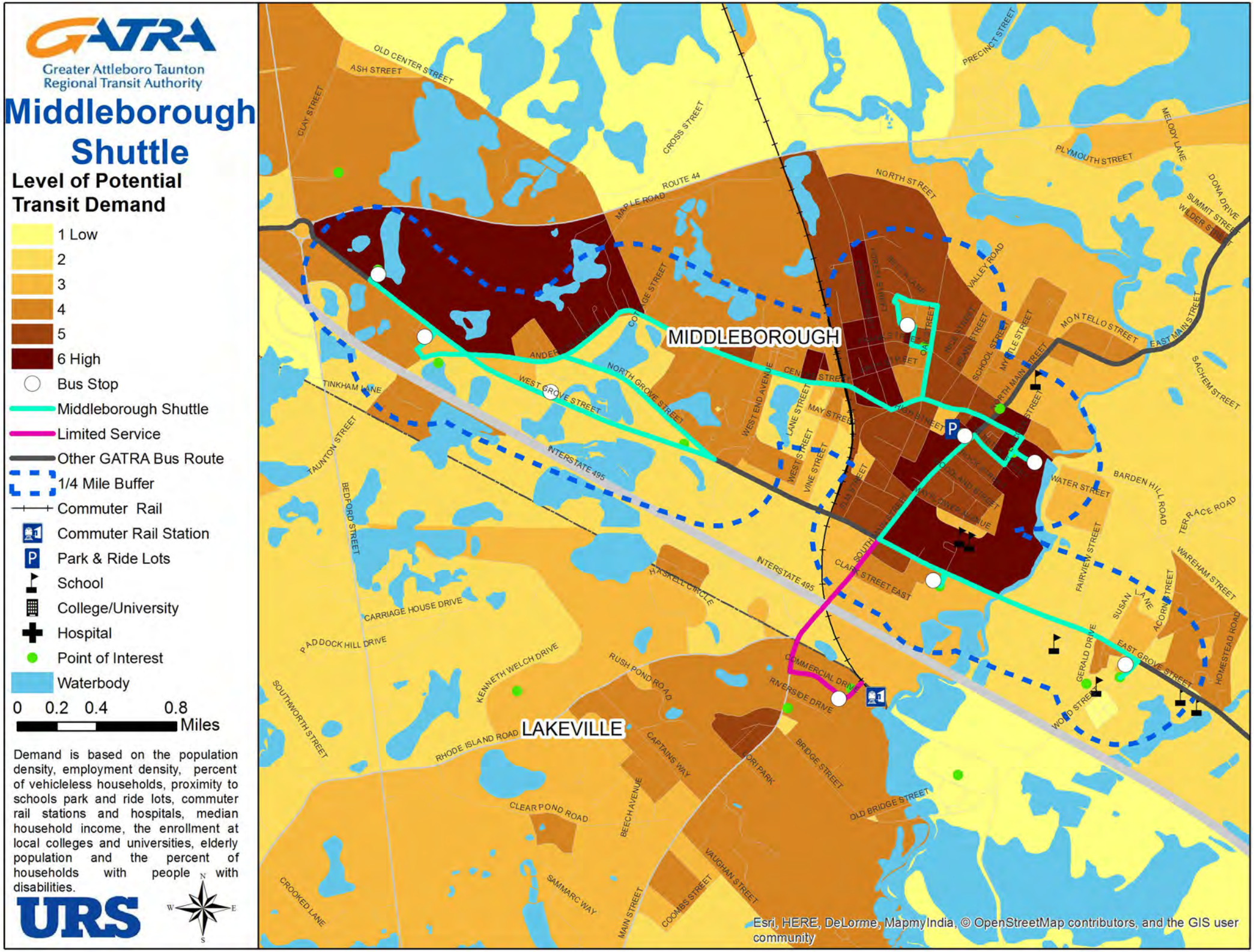
- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Medway T Shuttle
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- Hospital
- Point of Interest
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.3 0.6 1.2 Miles

URS


GATRA
Greater Attleboro Taunton Regional Transit Authority
Middleborough Shuttle
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Middleborough Shuttle
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.2 0.4 0.8 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
MIDDLEBOROUGH
LAKEVILLE
OLD CENTER STREET
ASH STREET
CLAY STREET
CROSS STREET
ROUTE 44
MAPLE ROAD
PRECINCT STREET
PLYMOUTH STREET
MELODY LANE
DONA DRIVE
SUMMIT STREET
WILDER STREET
NORTH STREET
VALLEY ROAD
COTTAGE STREET
NORTH GROVE STREET
WEST GROVE STREET
TINKHAM LANE
TAUNTON STREET
BEDFORD STREET
INTERSTATE 495
WEST END AVENUE
LANE STREET
WEST STREET
VINE STREET
MAY STREET
SCHOOL STREET
MYRTLE STREET
NORTH MAIN STREET
MONTELLO STREET
EAST MAIN STREET
SACHEM STREET
WATER STREET
BARDEN HILL ROAD
TERRACE ROAD
FAIRVIEW STREET
WAREHAM STREET
SUSAN LANE
ACORN STREET
HOMESTEAD ROAD
EAST GROVE STREET
GERALD DRIVE
WOOD STREET
CLARK STREET EAST
SOUTH MAIN STREET
HASKELL CIRCLE
CARRIAGE HOUSE DRIVE
PADDOCK HILL DRIVE
KENNETH WELCH DRIVE
SOUTHWORTH STREET
RUSH POND ROAD
COMMERCIAL DRIVE
RIVERSIDE DRIVE
RHODE ISLAND ROAD
CAPTAINS WAY
FORI PARK
BRIDGE STREET
OLD BRIDGE STREET
CLEAR POND ROAD
BEECH AVENUE
VAUGHAN STREET
SAMMARC WAY
MAIN STREET
COOMBS STREET
CROOKED LANE
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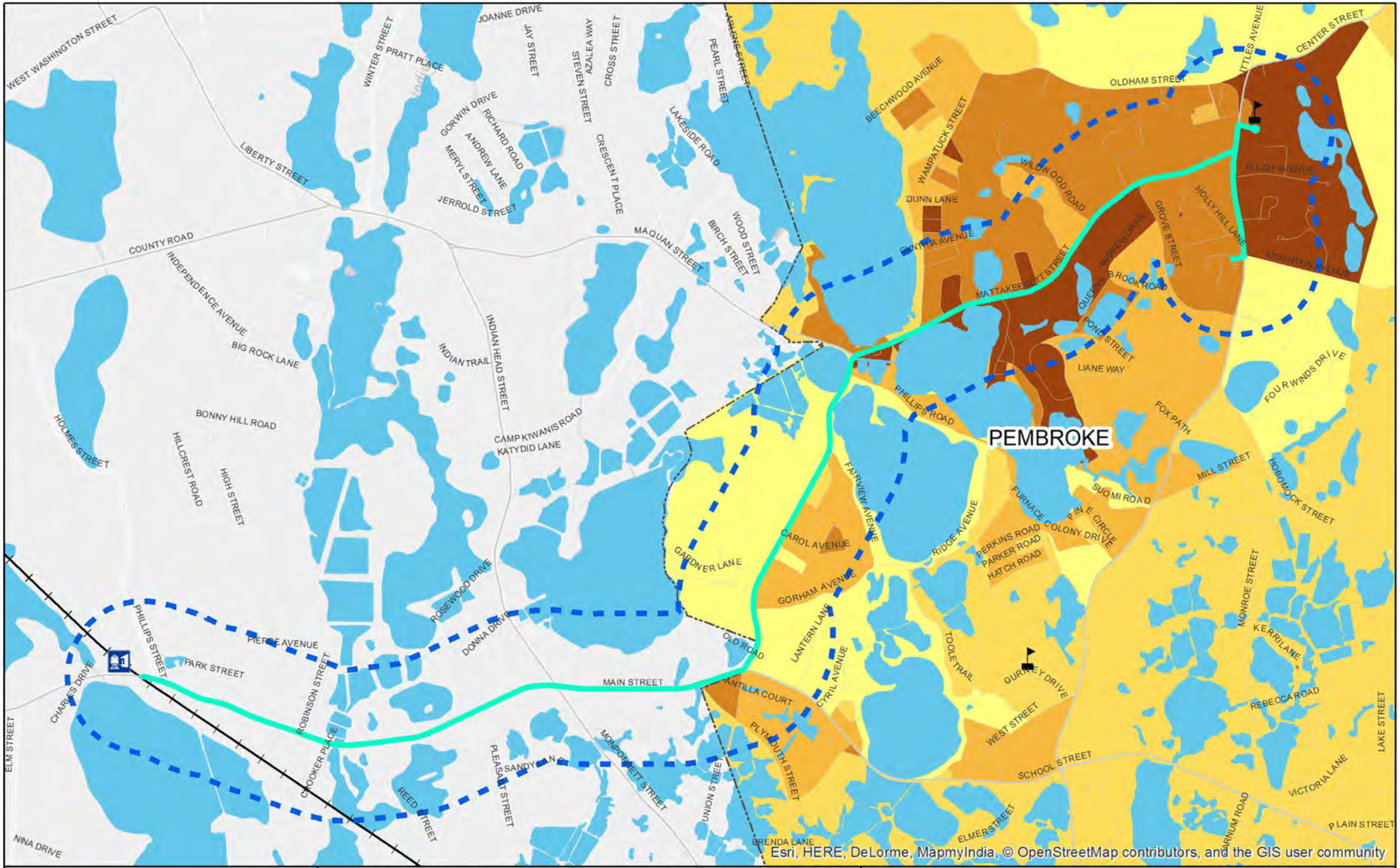


GATRA

Greater Attleboro Taunton Regional Transit Authority

Pembroke Shuttle

Level of Potential Transit Demand

- 1 Low
- 2
- 3
- 4
- 5
- 6 High

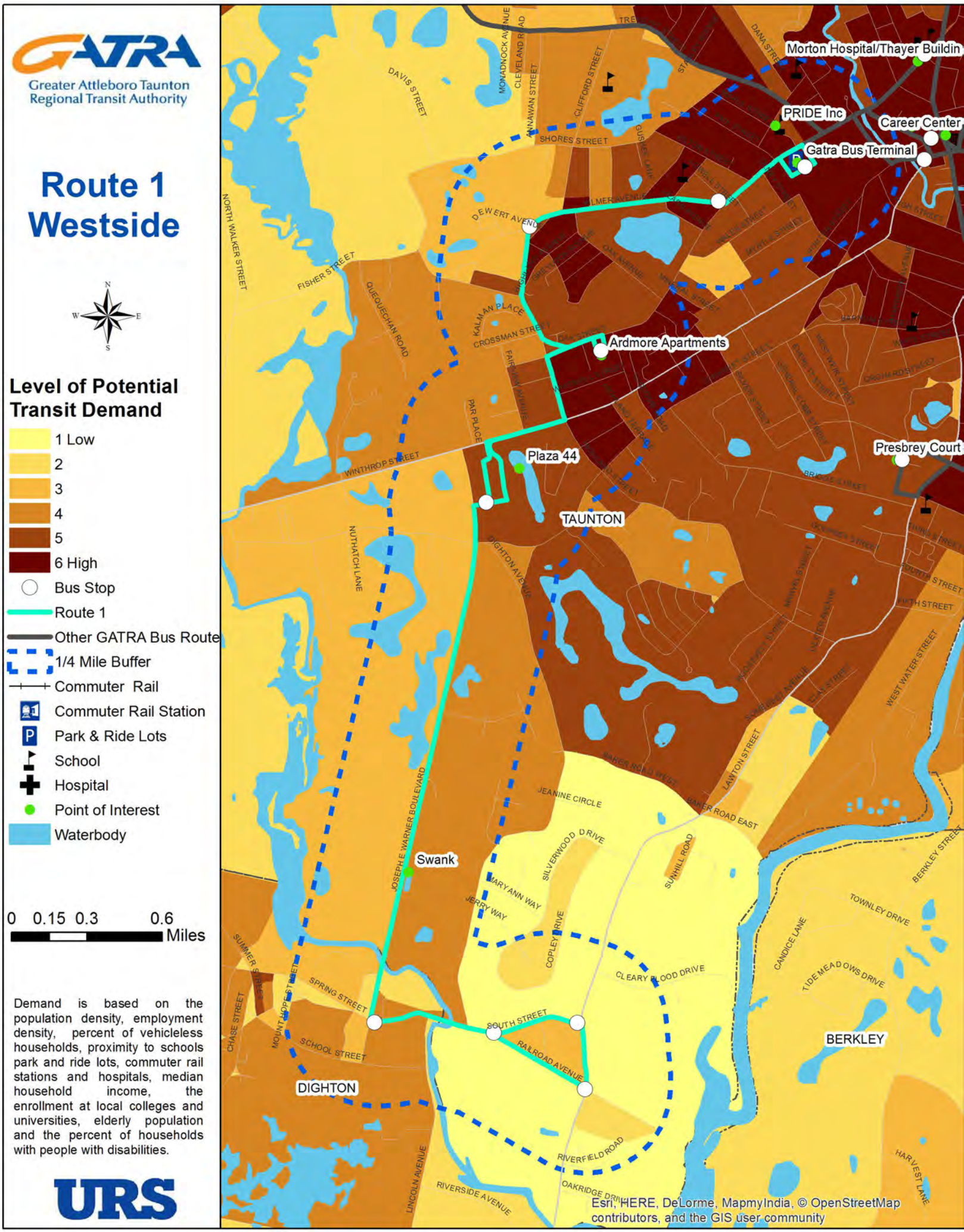
- Bus Stop
- Pembroke Shuttle
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station

- Park & Ride Lots
- School
- College/University
- Hospital
- Point of Interest
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.325 0.65 1.3 Miles

URS


GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 1 Westside
N
W
E
S
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 1
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
Hospital
Point of Interest
Waterbody
0 0.15 0.3 0.6
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
Morton Hospital/Thayer Buildin
PRIDE Inc
Career Center
Gatra Bus Terminal
Ardmore Apartments
Plaza 44
Presbrey Court
TAUNTON
Swank
DIGHTON
BERKLEY
DAVIS STREET
MONADNOCK AVENUE
CLEVELAND ROAD
ANAWAN STREET
CLIFFORD STREET
SHORES STREET
DEWERT AVENUE
NORTH WALKER STREET
FISHER STREET
QUEQUECHAN ROAD
KALMAN PLACE
CROSSMAN STREET
PAR PLACE
WINTHROP STREET
NUTHATCH LANE
DIGHTON AVENUE
JOSEPH E WARNER BOULEVARD
JEANINE CIRCLE
SILVERWOOD DRIVE
MARY ANN WAY
JERRY WAY
COPLEY DRIVE
SUNHILL ROAD
BAKER ROAD EAST
LAWTON STREET
WEST WATER STREET
BERKLEY STREET
TOWNLEY DRIVE
CANDICE LANE
TIDE MEADOWS DRIVE
CLEARY BLOOD DRIVE
SUMMER STREET
CHASE STREET
MOUNT HOPE STREET
SPRING STREET
SCHOOL STREET
SOUTH STREET
RAILROAD AVENUE
RIVERFIELD ROAD
OAKRIDGE DRIVE
RIVERSIDE AVENUE
LINCOLN AVENUE
HARVEST LANE
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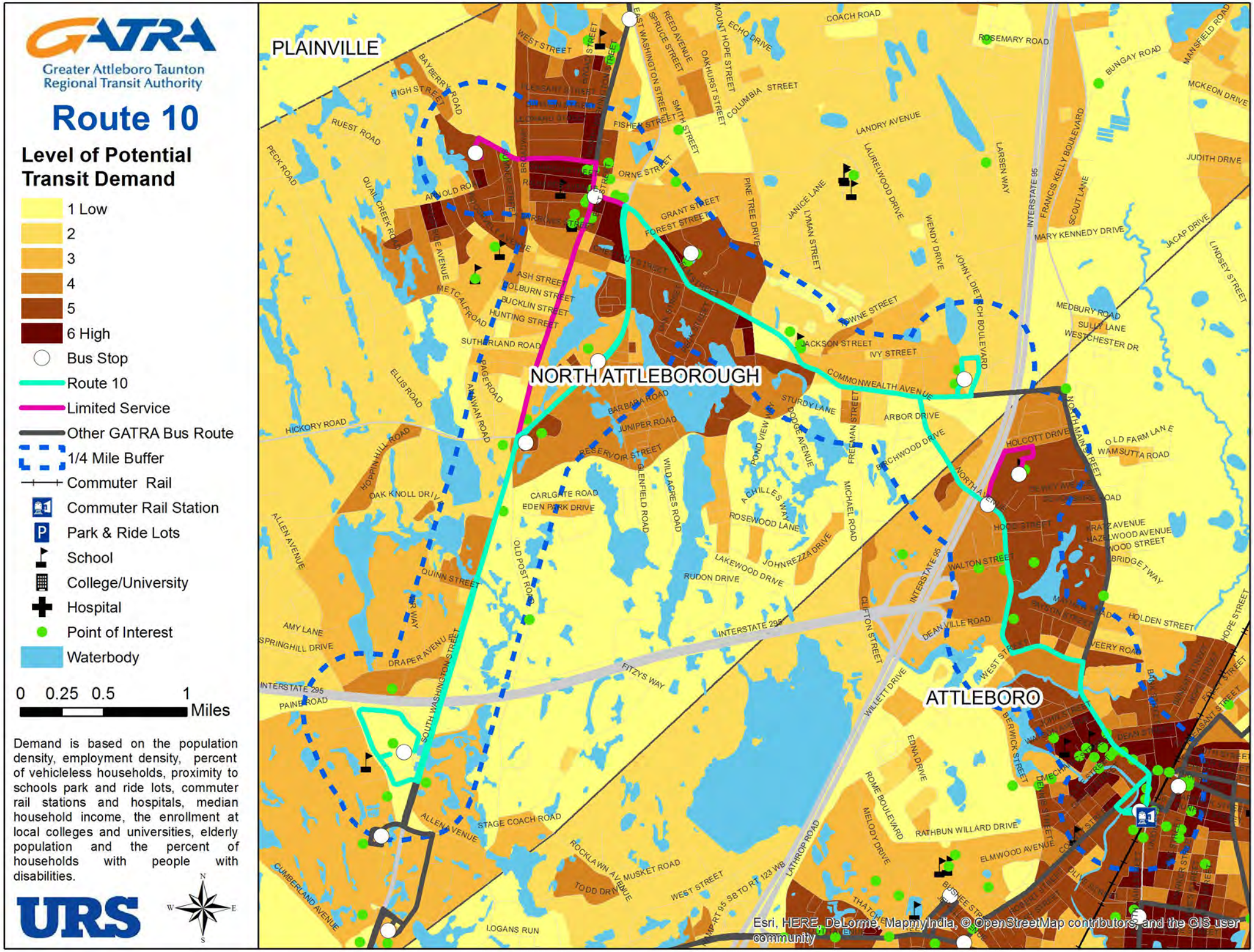
GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 10
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 10
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.25 0.5 1
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
PLAINVILLE
NORTH ATTLEBOROUGH
ATTLEBORO
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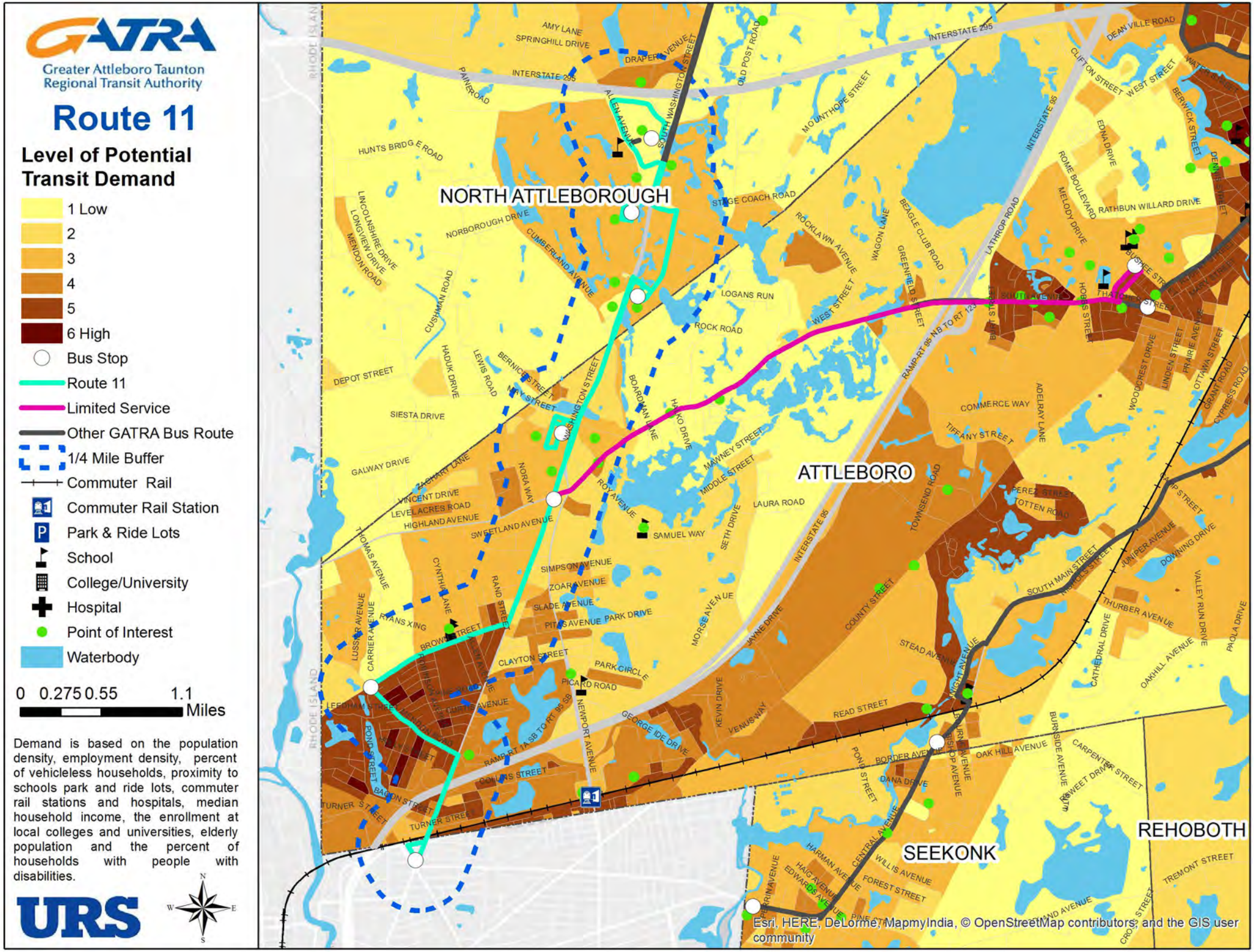
GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 11
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 11
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.275 0.55 1.1
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
NORTH ATTLEBOROUGH
ATTLEBORO
SEEKONK
REHOBOTH
RHODE ISLAND
INTERSTATE 295
INTERSTATE 95
INTERSTATE 86
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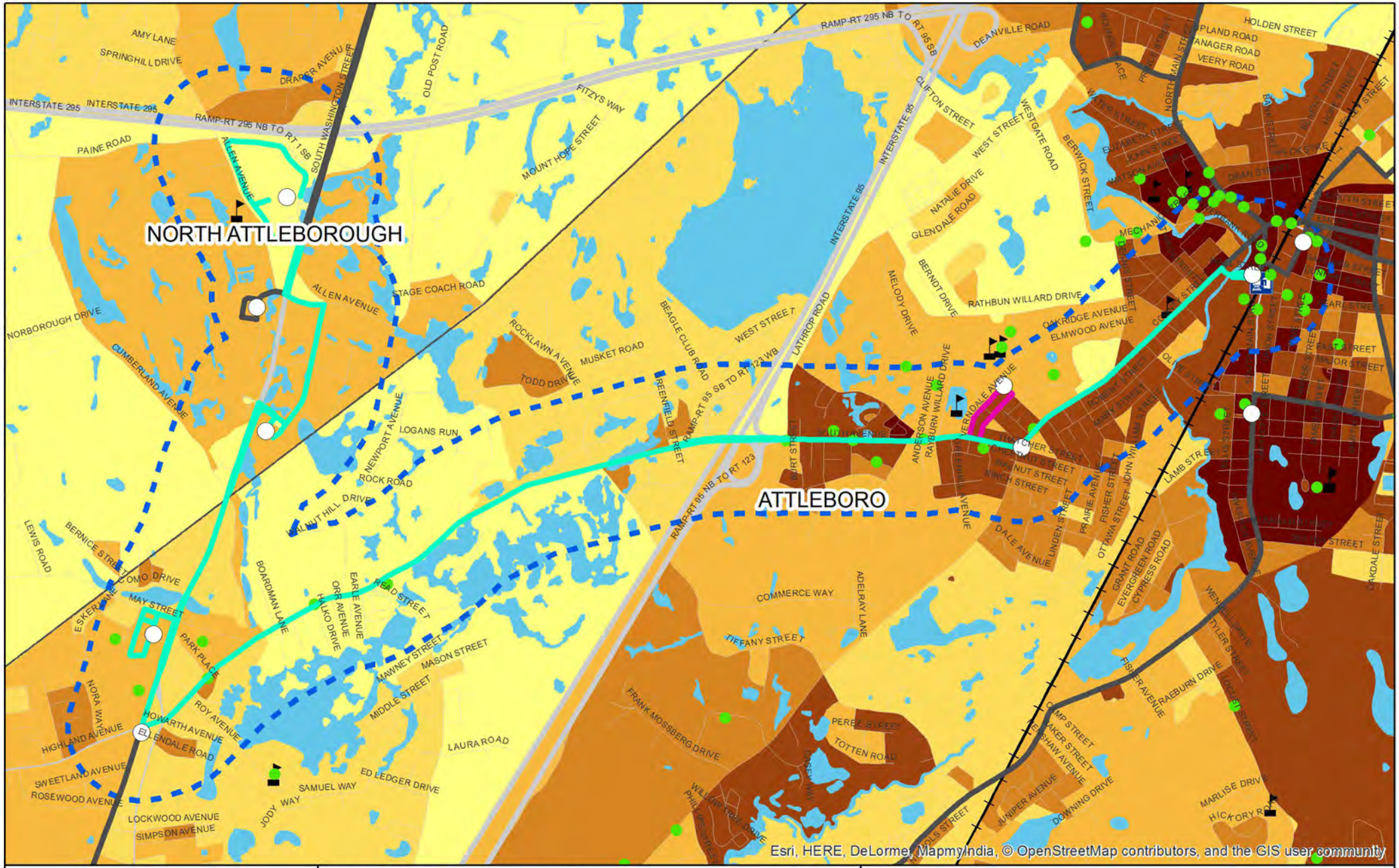


Greater Attleboro Taunton Regional Transit Authority

Route 12

Level of Potential Transit Demand

- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Route 12
- Limited Service
- Other GATRA Bus Route
- Point of Interest
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- College/University
- Hospital
- 1/4 Mile Buffer
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.275 0.55 1.1 Miles

URS

GATRA
Greater Attleboro Taunton Regional Transit Authority

Route 14

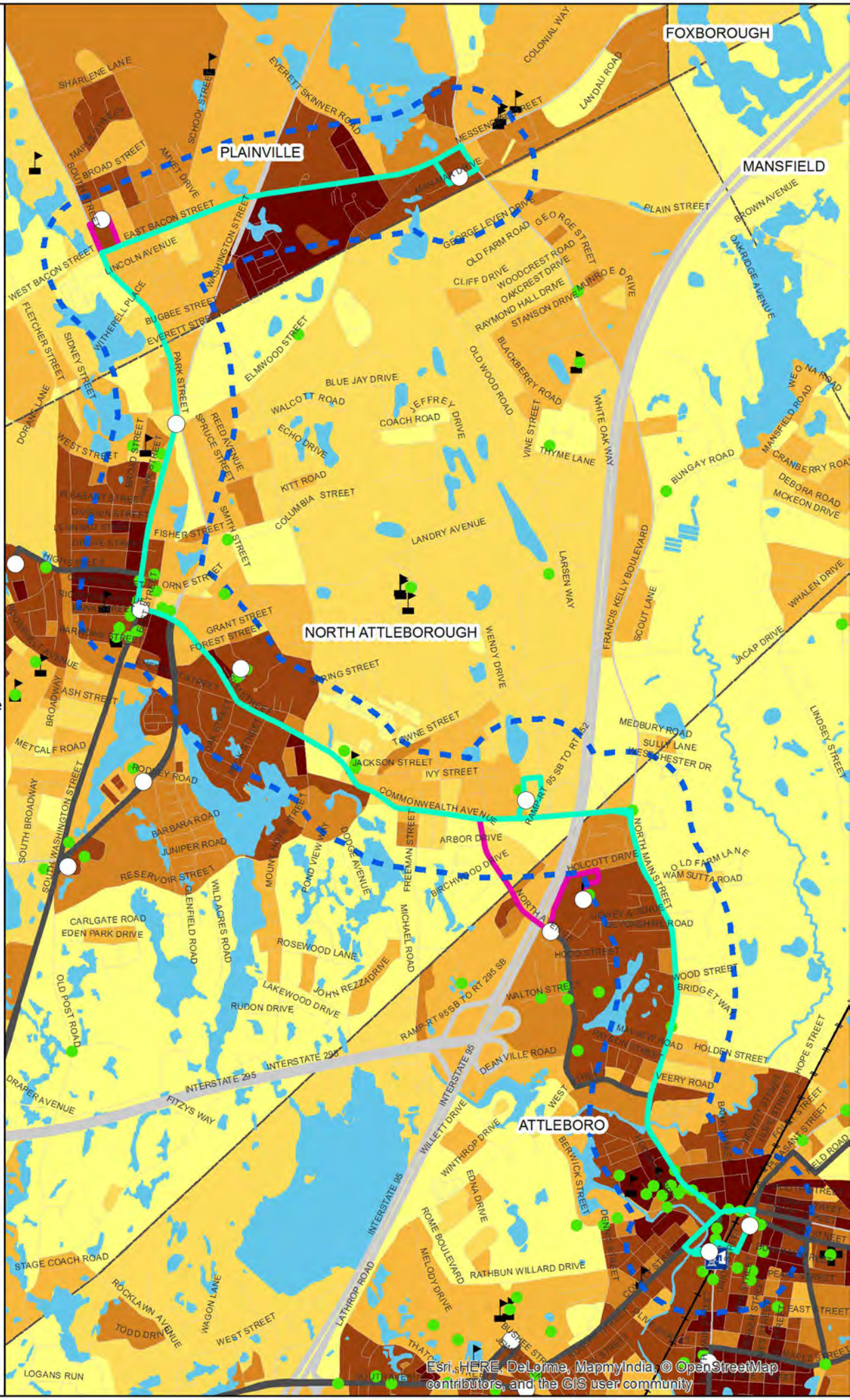
Level of Potential Transit Demand

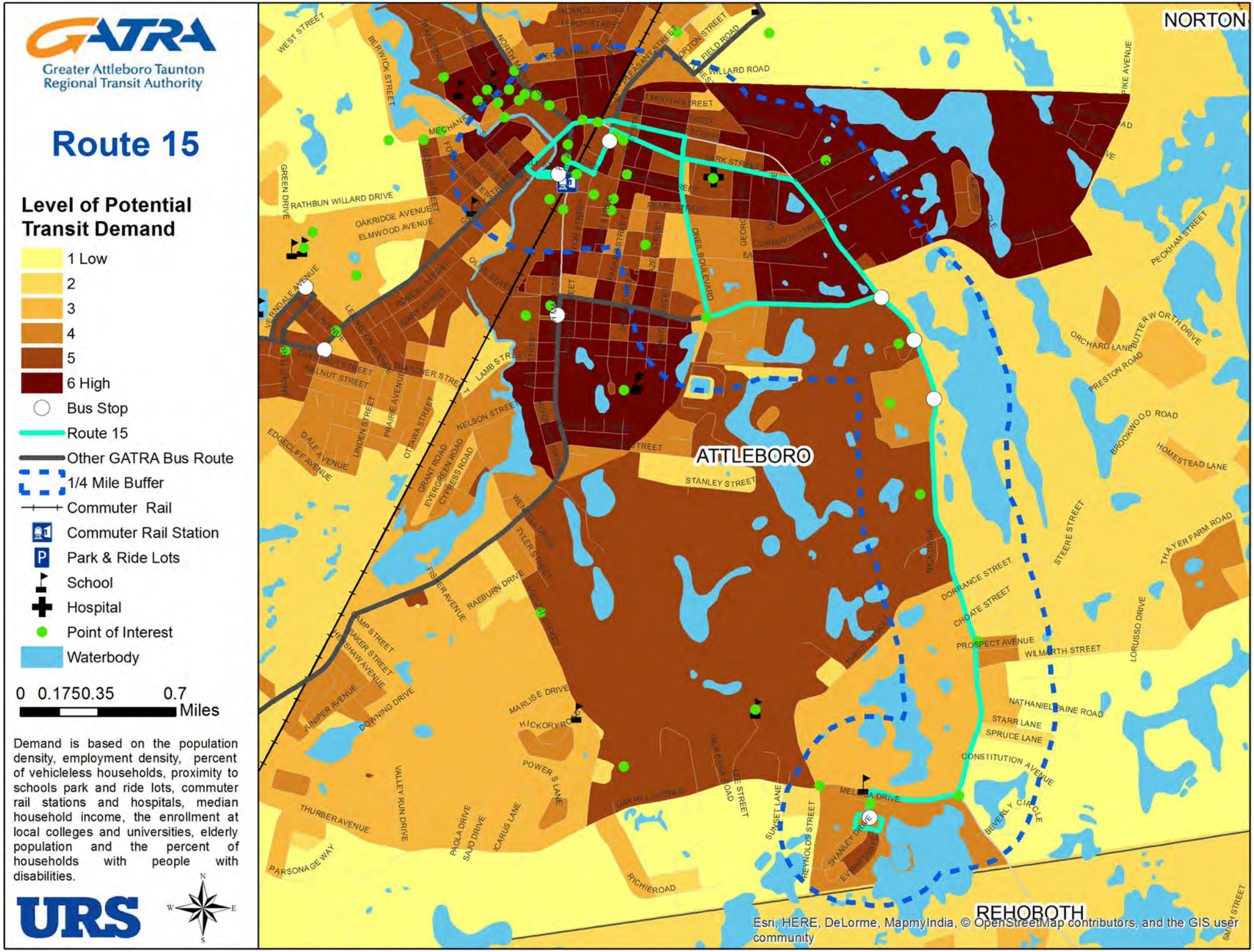
- 1 Low
- 2
- 3
- 4
- 5
- 6 High
- Bus Stop
- Route 14
- Limited Service
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- College/University
- Hospital
- Point of Interest
- Waterbody

0 0.25 0.5 1 Miles

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

URS




GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 15
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 15
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
Hospital
Point of Interest
Waterbody
0 0.1750.35 0.7
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
NORTON
ATTLEBORO
REHOBOTH
WEST STREET
BERWICK STREET
ROCKDALE STREET
LEROY STREET
NORTH MAIN STREET
PLEASANT STREET
NORTON STREET
FIELD ROAD
WILLARD ROAD
PIKE AVENUE
SMITH STREET
MECHANIC STREET
FOUNTAIN STREET
PARK STREET
GREEN DRIVE
RATHBUN WILLARD DRIVE
OAKRIDGE AVENUE
ELMWOOD AVENUE
ROBERTS STREET
JOHN STREET
OLIVER STREET
ONEIL BOULEVARD
GEORGE STREET
DUMAS STREET
PECKHAM STREET
VERNDALE AVENUE
CHESTNUT STREET
WALNUT STREET
THACHER STREET
LAMB STREET
ORCHARD LANE
BUTTERWORTH DRIVE
PRESTON ROAD
BROOKWOOD ROAD
HOMESTEAD LANE
EDGECLIFF AVENUE
DALE AVENUE
LINDEN STREET
PRAIRIE AVENUE
OTTAWA STREET
GRANT ROAD
EVERGREEN ROAD
CYPRESS ROAD
NELSON STREET
STANLEY STREET
WEBSTER STREET
TYLER STREET
FISHER AVENUE
RAEBURN DRIVE
STEERE STREET
THAYER FARM ROAD
DORRANCE STREET
CHOATE STREET
PROSPECT AVENUE
WILMARTH STREET
LORUSSO DRIVE
NATHANIEL PAINE ROAD
STARR LANE
SPRUCE LANE
CONSTITUTION AVENUE
BEVERLY CIRCLE
CAMP STREET
KENDRICK BAKER STREET
KENSHAW AVENUE
JUNIPER AVENUE
DOWNING DRIVE
MARLISE DRIVE
HICKORY ROAD
POWERS LANE
VALLEY RUN DRIVE
THURBER AVENUE
PARSONAGE WAY
PAOLA DRIVE
SAJO DRIVE
ICARUS LANE
LEE STREET
SUNSET LANE
REYNOLDS STREET
MELISSA DRIVE
SHANLEY DRIVE
EVERGREEN CIRCLE
RICHIE ROAD
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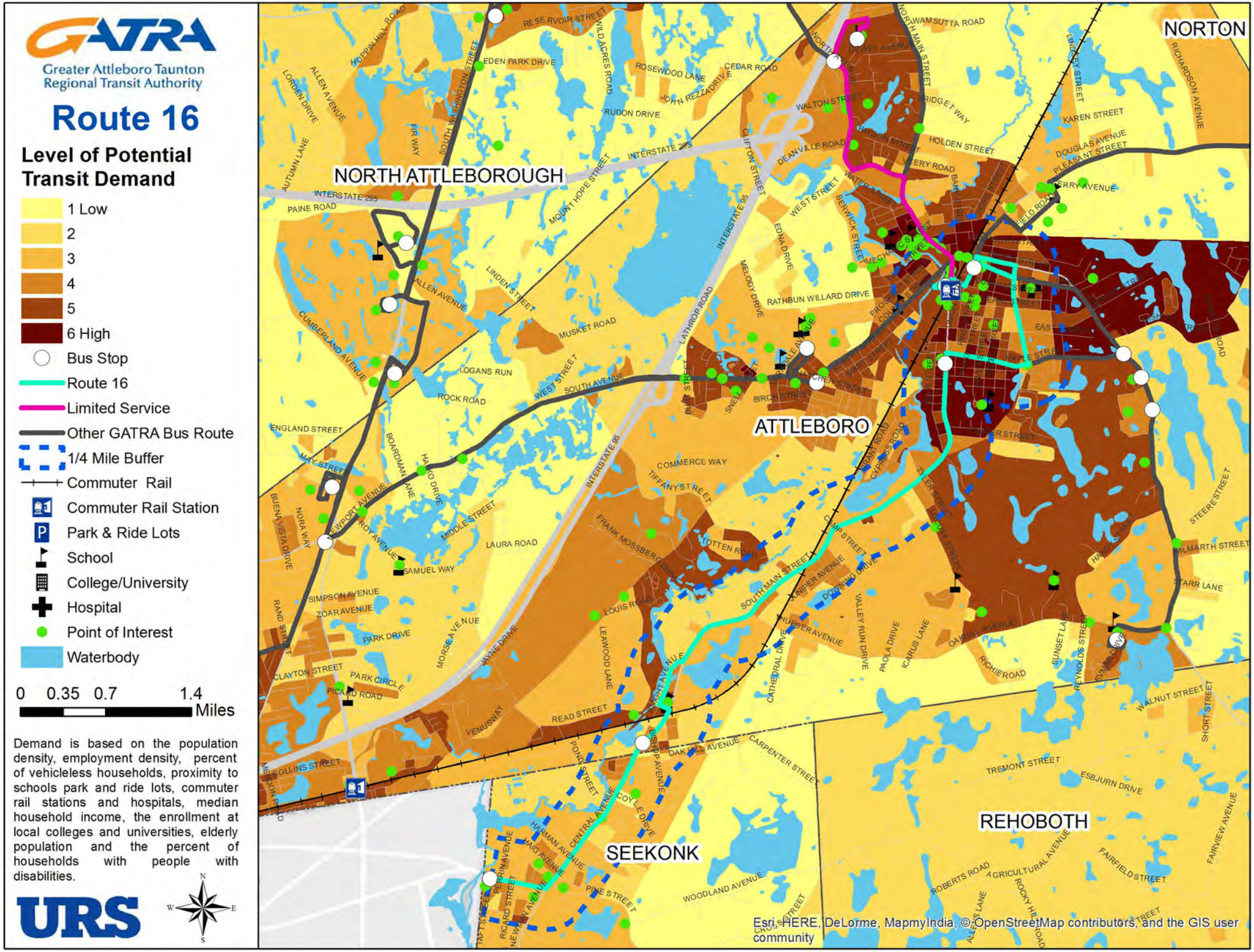
GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 16
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 16
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.35 0.7 1.4 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
NORTON
NORTH ATTLEBOROUGH
ATTLEBORO
SEEKONK
REHOBOTH
INTERSTATE 295
INTERSTATE 95
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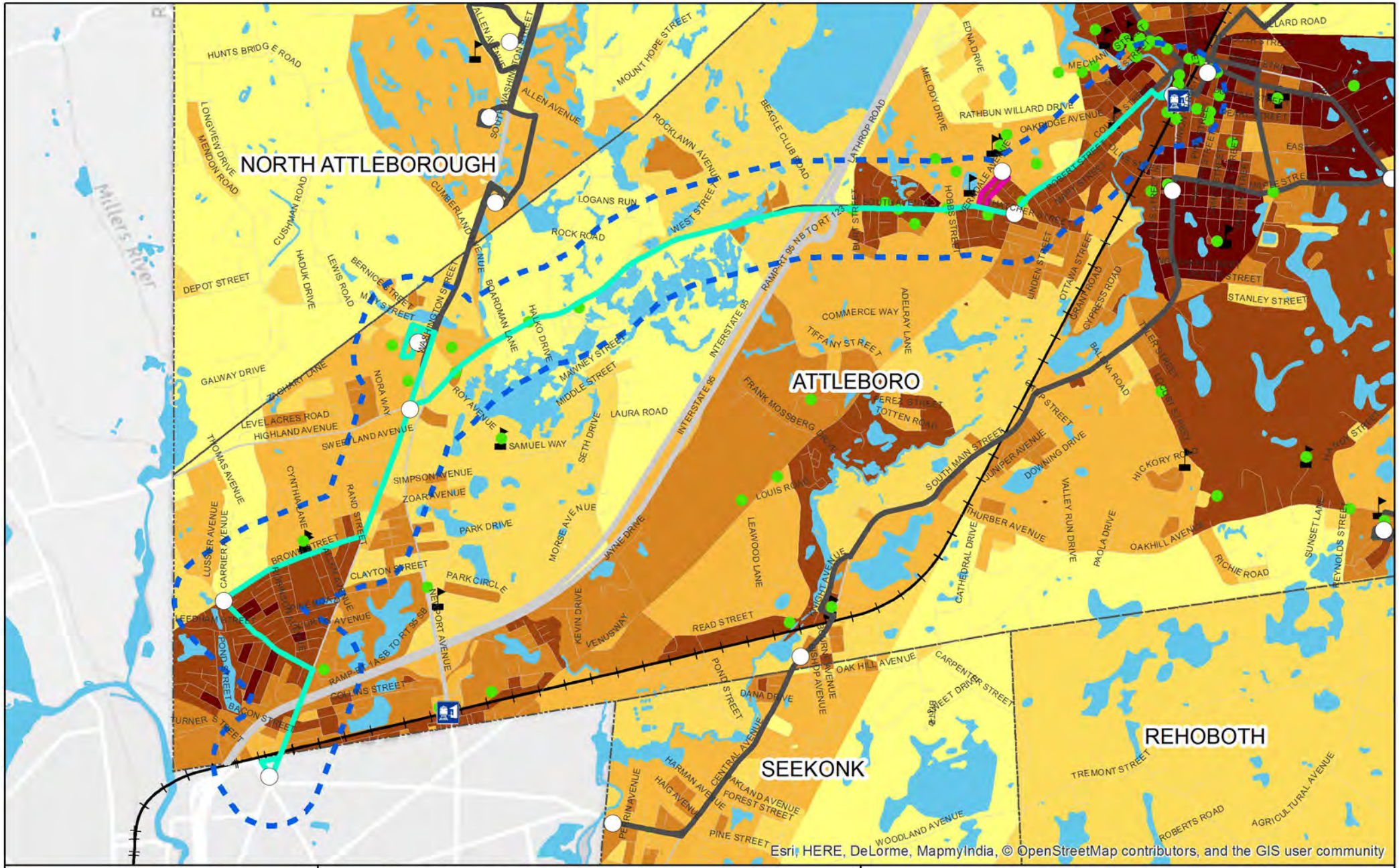


Greater Attleboro Taunton Regional Transit Authority

Route 24

Level of Potential Transit Demand

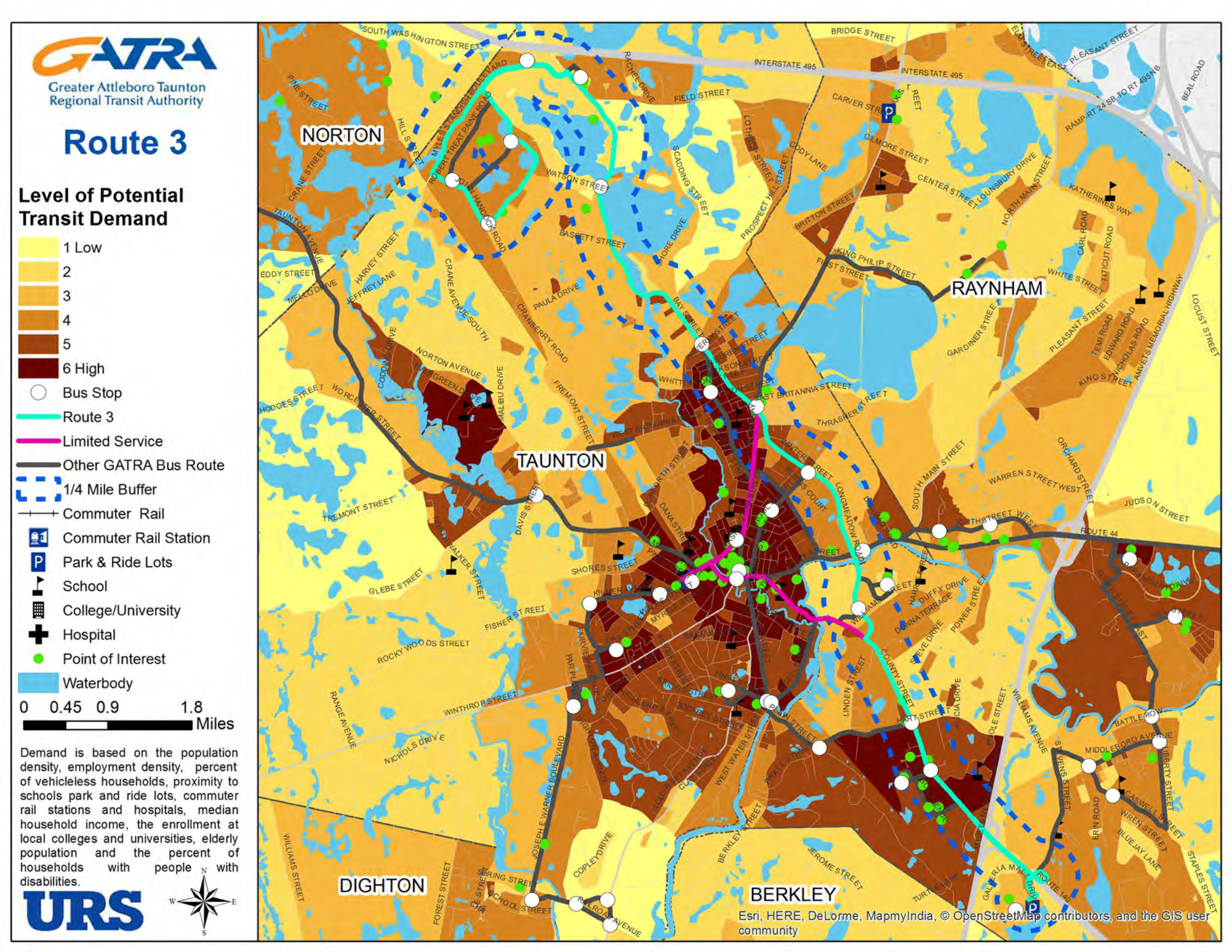
- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Route 24
- Limited Service
- Other GATRA Bus Route
- Point of Interest
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- College/University
- Hospital
- 1/4 Mile Buffer
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.425 0.85 1.7 Miles

URS


GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 3
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 3
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.45 0.9 1.8
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
NORTON
TAUNTON
RAYNHAM
DIGHTON
BERKLEY
SOUTH WASHINGTON STREET
INTERSTATE 495
BRIDGE STREET
PLEASANT STREET
RAMP RT 24 SB TO RT 495 NB
BEAL ROAD
PINE STREET
HILLS STREET
MILES STANDISH BOULEVARD
ROBERT TREAT PAINE ROAD
JOHN HANCOCK ROAD
RACHEL DRIVE
FIELD STREET
CRANE STREET
TAUNTON AVENUE
EDDY STREET
MELLO DRIVE
HARVEY STREET
JEFFREY LANE
CRANE AVENUE SOUTH
CRANBERRY ROAD
PAULA DRIVE
WATSON STREET
BASSETT STREET
SHORE DRIVE
SCADDING STREET
LOTHROP STREET
PROSPECT HILL STREET
CODDY LANE
CARVER STREET
GILMORE STREET
CENTER STREET
LOUNSBURY DRIVE
NORTH MAIN STREET
BRITTON STREET
KING PHILIP STREET
FIRST STREET
KATHERINES WAY
CARL ROAD
THTICUT ROAD
WHITE STREET
GARDINER STREET
PLEASANT STREET
TENI ROAD
EDWARD ROAD
NICHOLAS ROAD
AMVETS MEMORIAL HIGHWAY
LOCUST STREET
KING STREET
NORTON AVENUE
CODDING DRIVE
MALIBU DRIVE
FREMONT STREET
HODGES STREET
WORCESTER STREET
WHITTENTON STREET
EAST BRITANNIA STREET
THRASHER STREET
WINTER STREET
LONGMEADOW ROAD
SOUTH MAIN STREET
WARREN STREET WEST
ORCHARD STREET
JUDSON STREET
SOUTH STREET WEST
ROUTE 44
TREMONT STREET
DAVIS STREET
DANA STREET
SHORES STREET
GLEBE STREET
WALKER STREET
FISHER STREET
ROCKY WOODS STREET
WINTHROP STREET
RANGE AVENUE
NICHOLS DRIVE
DUFFY DRIVE
DONNATERRACE
POWER STREET
STEVE DRIVE
COUNTY STREET
LINDEN STREET
HART STREET
COLE STREET
WILLIAMS AVENUE
BATTLE ROW
MIDDLEBORO AVENUE
LIBERTY STREET
STEVENS STREET
ERN ROAD
CASWELL STREET
WREN STREET
BLUEJAY LANE
STAPLES STREET
WEST WATER STREET
JOSEPH E WARNER BOULEVARD
COPLEY DRIVE
BERKLEY STREET
JEROME STREET
GALLERIA MALL DRIVE
ROUTE 140
WILLIAMS STREET
FOREST STREET
SPRING STREET
SCHOOL STREET
RAILROAD AVENUE
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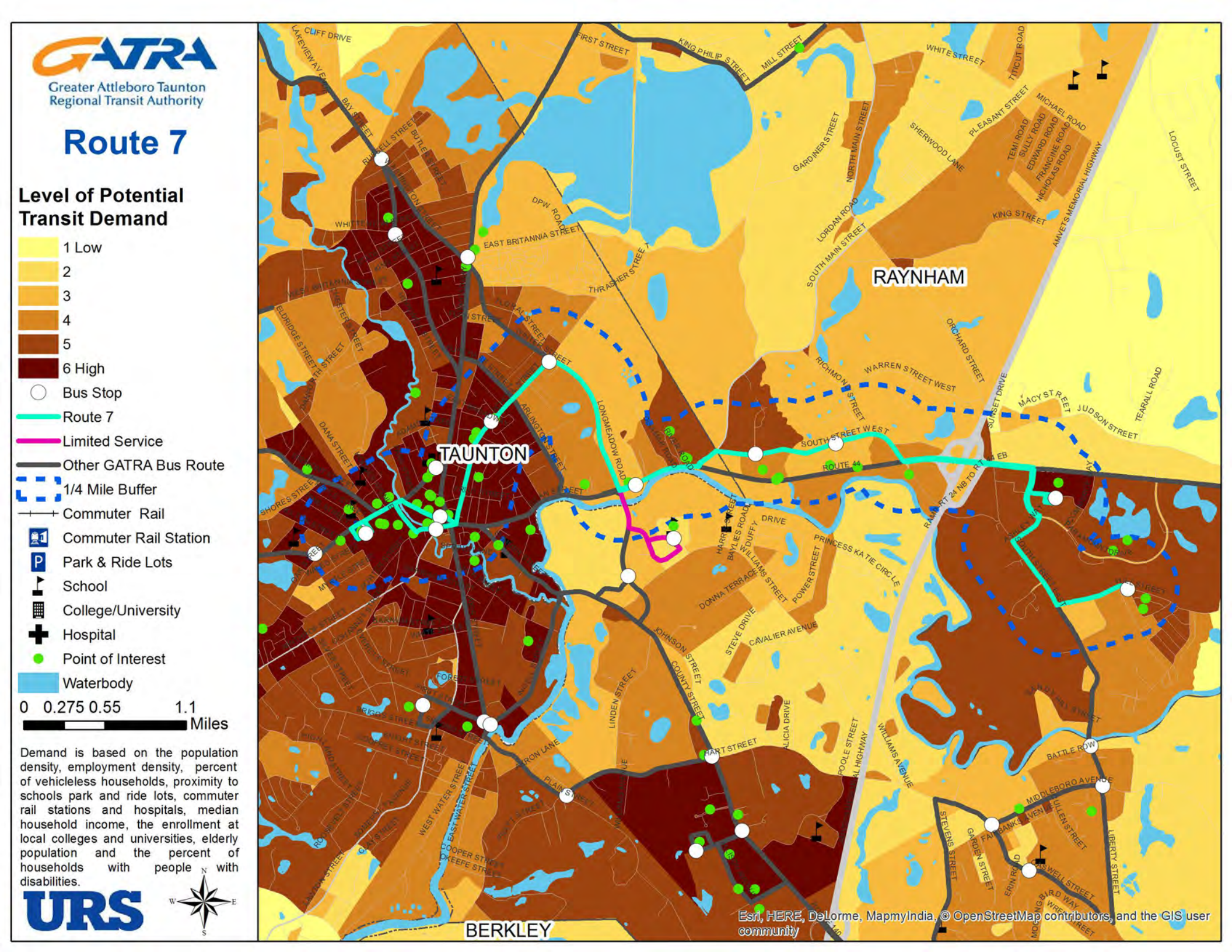
GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 7
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 7
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.275 0.55 1.1
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
TAUNTON
RAYNHAM
BERKLEY
CLIFF DRIVE
FIRST STREET
KING PHILIP STREET
MILL STREET
WHITE STREET
TITICUT ROAD
PLEASANT STREET
MICHAEL ROAD
SHERWOOD LANE
GARDINER STREET
NORTH MAIN STREET
TEMI ROAD
SULLY ROAD
EDWARD ROAD
FRANCINE ROAD
NICHOLAS ROAD
LOCUST STREET
AMVETS MEMORIAL HIGHWAY
KING STREET
LORDAN ROAD
SOUTH MAIN STREET
DPW ROAD
EAST BRITANNIA STREET
THRASHER STREET
ORCHARD STREET
WARREN STREET WEST
RICHMOND STREET
SUNSET DRIVE
MACY STREET
JUDSON STREET
TEARALL ROAD
SOUTH STREET WEST
ROUTE 44
LONGMEADOW ROAD
HARRISON STREET
BAYLES ROAD
DUFFY DRIVE
WILLIAMS STREET
POWER STREET
PRINCESS KATIE CIRCLE
DONNA TERRACE
STEVE DRIVE
CAVALIER AVENUE
JOHNSON STREET
COUNTY STREET
LINDEN STREET
ALICIA DRIVE
POOLE STREET
WILLIAMS AVENUE
HART STREET
BATTLE ROW
MIDDLEBORO AVENUE
FAIRBANKS AVENUE
STEVENS STREET
GARDEN STREET
ERIN ROAD
CASWELL STREET
LIBERTY STREET
MOCKING BIRD WAY
WREN STREET
CULLEN STREET
RUSSELL STREET
BUTLER STREET
WHITTEN STREET
ELDRIDGE STREET
CHESTER STREET
DANA STREET
ARLINGTON STREET
SHORES STREET
BRIGGS STREET
FOREST STREET
MAIN STREET
WEST WATER STREET
EAST WATER STREET
COOPER STREET
O'KEEFE STREET
PLAIN STREET
CARON LANE
ROUTE 24 NB TO RT 44 EB
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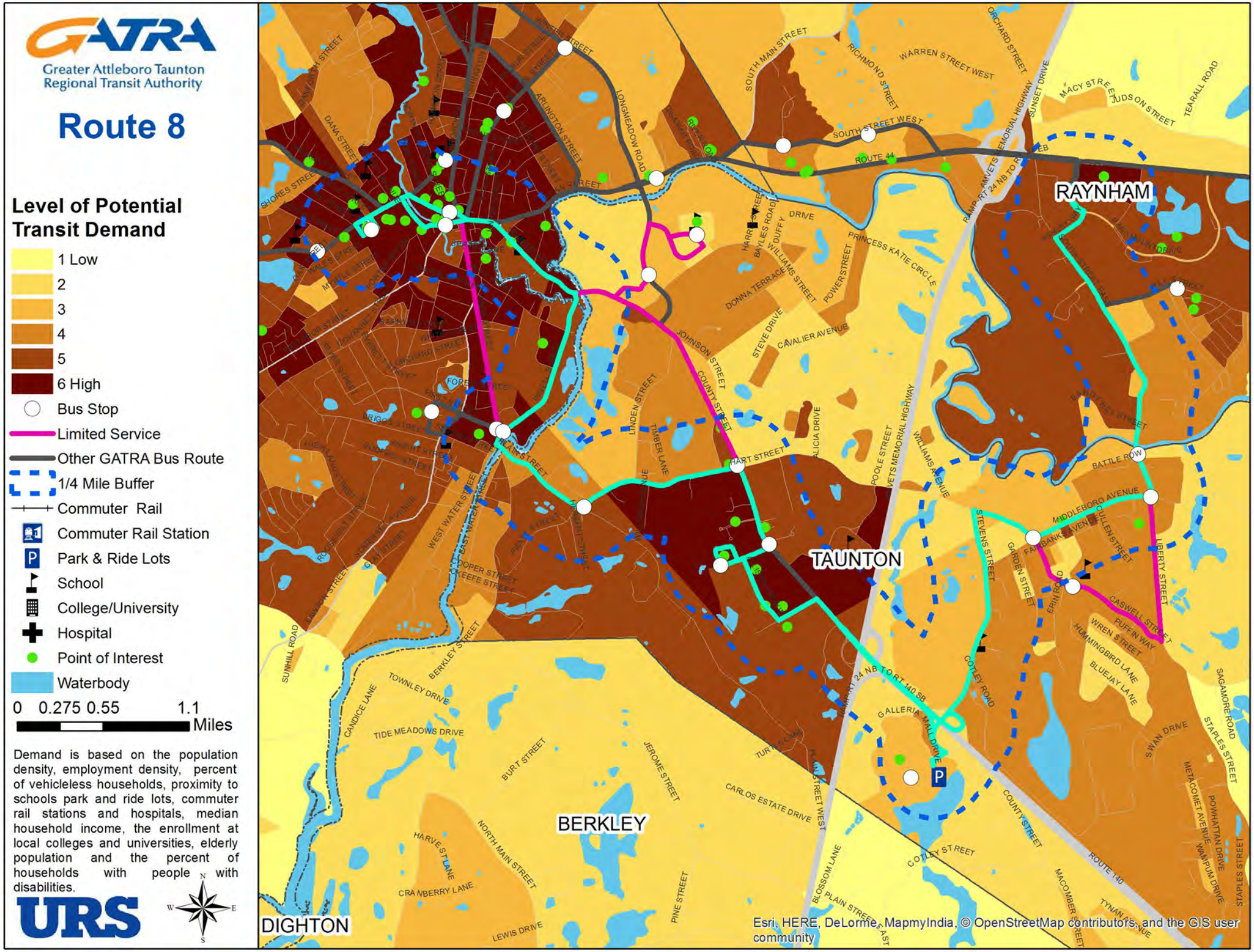
GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 8
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.275 0.55 1.1
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
RAYNHAM
TAUNTON
BERKLEY
DIGHTON
SOUTH MAIN STREET
WARREN STREET WEST
SOUTH STREET WEST
ROUTE 44
LONGMEADOW ROAD
ARLINGTON STREET
DANA STREET
SHORES STREET
HARRY S TRUMAN DRIVE
BAYLIES ROAD
DUFFY DRIVE
WILLIAMS STREET
POWER STREET
PRINCESS KATIE CIRCLE
DONNA TERRACE
STEVE DRIVE
CAVALIER AVENUE
JOHNSON STREET
COUNTY STREET
LINDEN STREET
TIMBER LANE
HART STREET
POOLE STREET
WILLIAMS AVENUE
BATTLE ROW
MIDDLEBORO AVENUE
FAIRBANKS AVENUE
CULLEN STREET
LIBERTY STREET
CASWELL STREET
PUFFIN WAY
WREN STREET
HUMMINGBIRD LANE
BLUEJAY LANE
SWAN DRIVE
SAGAMORE ROAD
STAPLES STREET
POWHATTAN DRIVE
WAMPUM DRIVE
METACOMET AVENUE
MACOMBER STREET
TYNAN AVENUE
STEVENS STREET
GARDEN STREET
ERIN ROAD
COTLEY ROAD
COTLEY ST REET
GALLERIA MALL DRIVE
RAMP-RT 24 NB TO RT 140 SB
RAMP-RT 24 NB TO R
SUNSET DRIVE
ORCHARD STREET
MACY STREET
JUDSON STREET
TEARALL ROAD
RICHMOND STREET
WEST WATER STREET
EAST WATER STREET
COOPER STREET
O'KEEFE STREET
SUNHILL ROAD
BERKLEY STREET
TOWNLEY DRIVE
CANDICE LANE
TIDE MEADOWS DRIVE
BURT STREET
JEROME STREET
CARLOS ESTATE DRIVE
HARVE STLANE
CRANBERRY LANE
NORTH MAIN STREET
PINE STREET
LEWIS DRIVE
BLOSSOM LANE
PLAIN STREET EAST
ROUTE 140
FLAG STREET WEST
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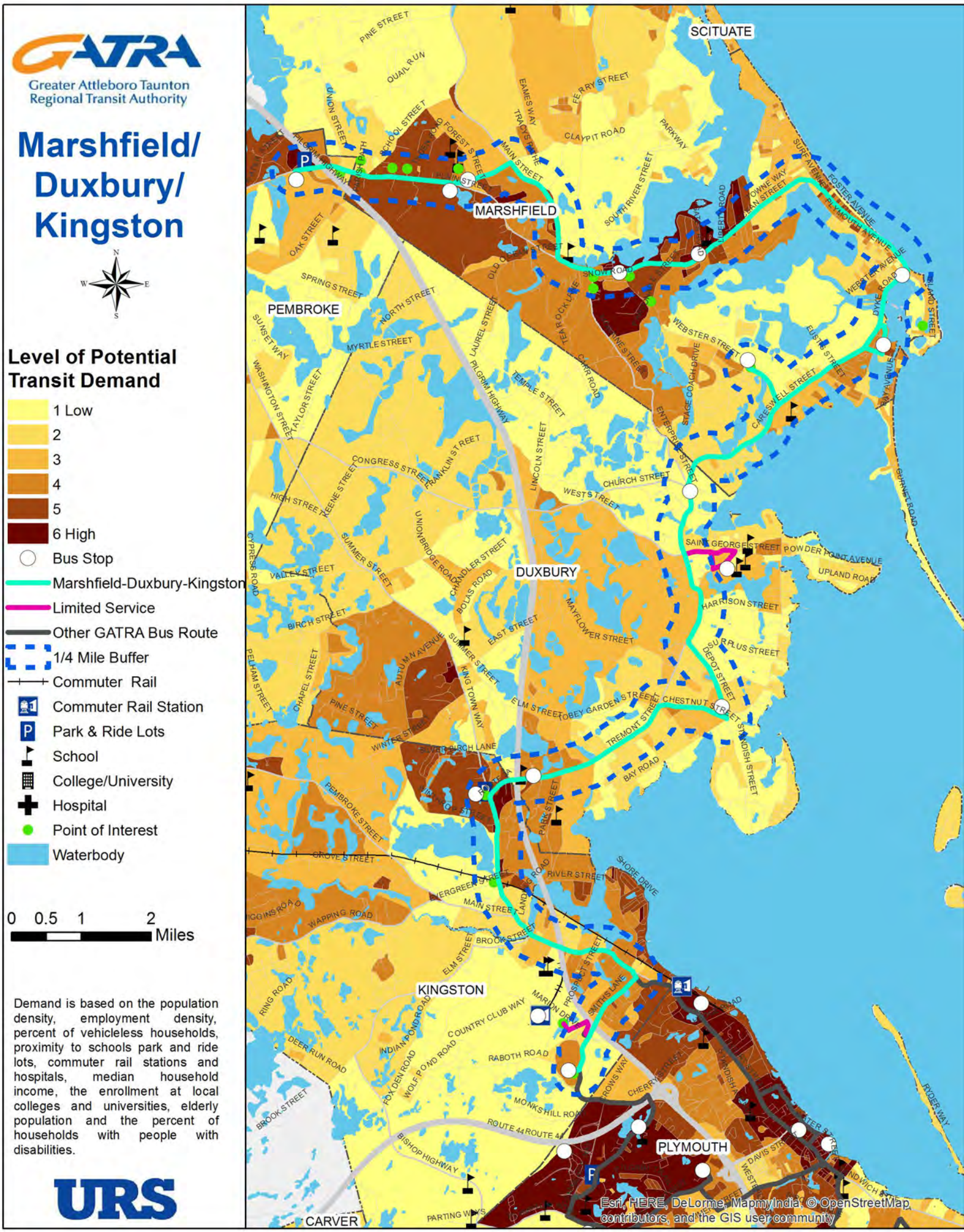
GATRA
Greater Attleboro Taunton Regional Transit Authority
Marshfield/ Duxbury/ Kingston
N
W
E
S
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Marshfield-Duxbury-Kingston
Limited Service
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.5 1 2
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
SCITUATE
MARSHFIELD
PEMBROKE
DUXBURY
KINGSTON
PLYMOUTH
CARVER
PINE STREET
QUAIL RUN
UNION STREET
SCHOOL STREET
FERRY STREET
EAMES WAY
TRACY'S PATH
MAIN STREET
CLAYPIT ROAD
PARKWAY
SOUTH RIVER STREET
OAK STREET
SPRING STREET
NORTH STREET
SUNSET WAY
WASHINGTON STREET
TAYLOR STREET
MYRTLE STREET
LAUREL STREET
PILGRIM HIGHWAY
TEMPLE STREET
CHARR ROAD
WEBSTER STREET
STAGE COACH DRIVE
ENTERPRISE STREET
CARESWELL STREET
DYKE ROAD
WERTE AVENUE
FOSTER AVENUE
PLYMOUTH AVENUE
ELM STREET
CONGRESS STREET
FRANKLIN STREET
HIGH STREET
KEENE STREET
LINCOLN STREET
CHURCH STREET
WEST STREET
SAINT GEORGE STREET
POWDER POINT AVENUE
UPLAND ROAD
HARRISON STREET
SURPLUS STREET
DEPOT STREET
CYPRESS ROAD
VALLEY STREET
SUMMER STREET
UNIONBRIDGE ROAD
CHANDLER STREET
BOLLES ROAD
MAYFLOWER STREET
EAST STREET
BIRCH STREET
PELHAM STREET
CHAPEL STREET
AUTUMN AVENUE
KING TOWN WAY
ELM STREET
OBEY GARDEN STREET
CHESTNUT STREET
STANDISH STREET
TREMONT STREET
BAY ROAD
PINE STREET
WINTER STREET
RIVER BIRCH LANE
PARK STREET
PEMBROKE STREET
GROVE STREET
EVERGREEN STREET
RIVER STREET
SHORE DRIVE
MAIN STREET
LANDING ROAD
WAPPING ROAD
BROOK STREET
ELM STREET
RING ROAD
COUNTRY CLUB WAY
MARION DRIVE
PROSPECT STREET
SMITHS LANE
INDIAN POND ROAD
DEER RUN ROAD
FOX DEN ROAD
WOLF POND ROAD
RABOTH ROAD
CHERRY STREET
BROWS WAY
MONKS HILL ROAD
ROUTE 44
BISHOP HIGHWAY
PARTING WAYS
DAVIS STREET
WESTERN AVENUE
RYDER WAY
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GATRA
Greater Attleboro Taunton Regional Transit Authority

Wheaton T Shuttle

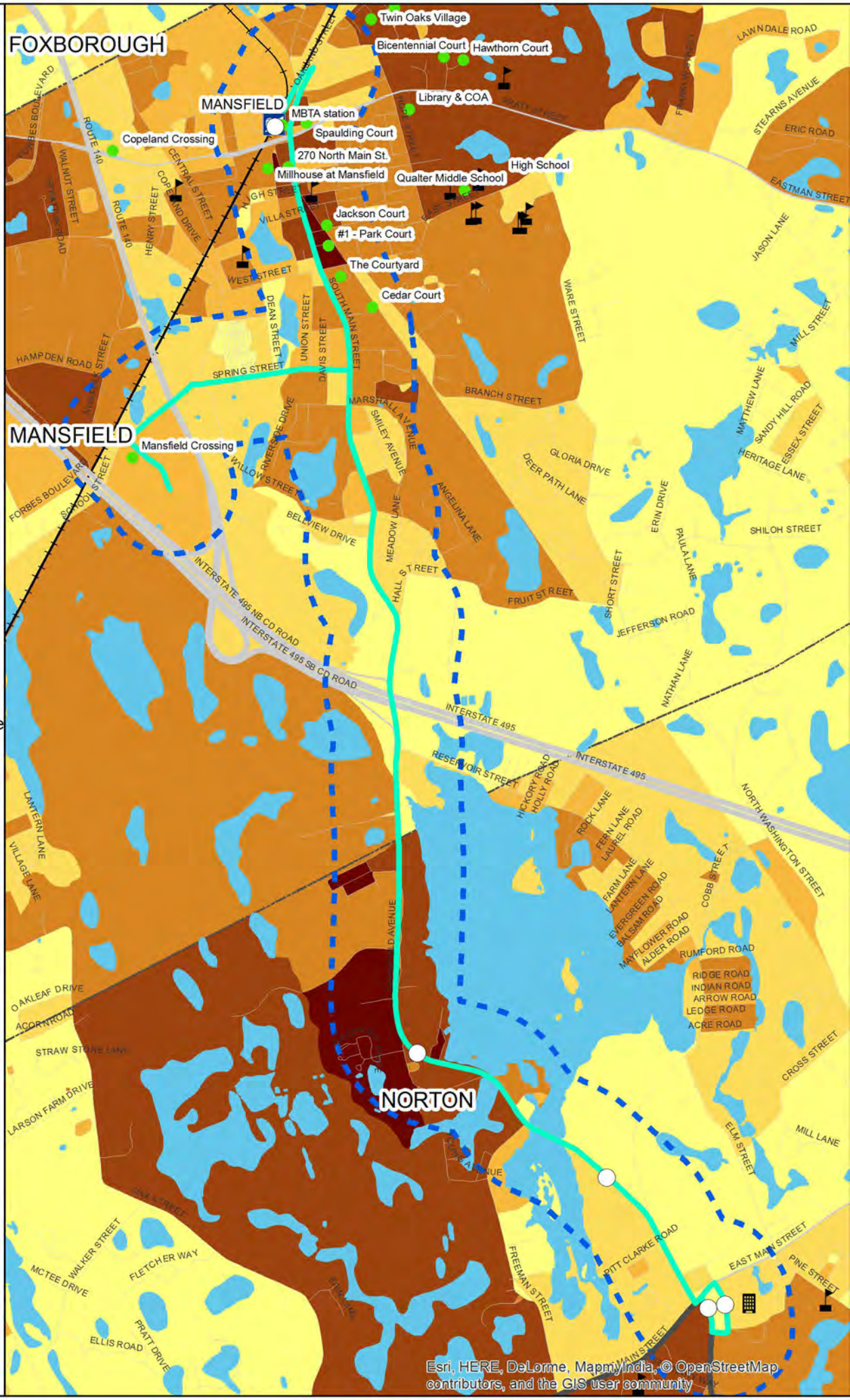
Level of Potential Transit Demand

- 1 Low
- 2
- 3
- 4
- 5
- 6 High
- Bus Stop
- Wheaton T Shuttle
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- Hospital
- Point of Interest
- Waterbody

0 0.2250.45 0.9 Miles

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

URS



GATRA
Greater Attleboro Taunton Regional Transit Authority

Route 6

Level of Potential Transit Demand

- 1 Low
- 2
- 3
- 4
- 5
- 6 High
- Bus Stop
- Route 6
- Limited Service
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- College/University
- Hospital
- Point of Interest
- Waterbody

0 0.375 0.75 1.5 Miles

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

URS

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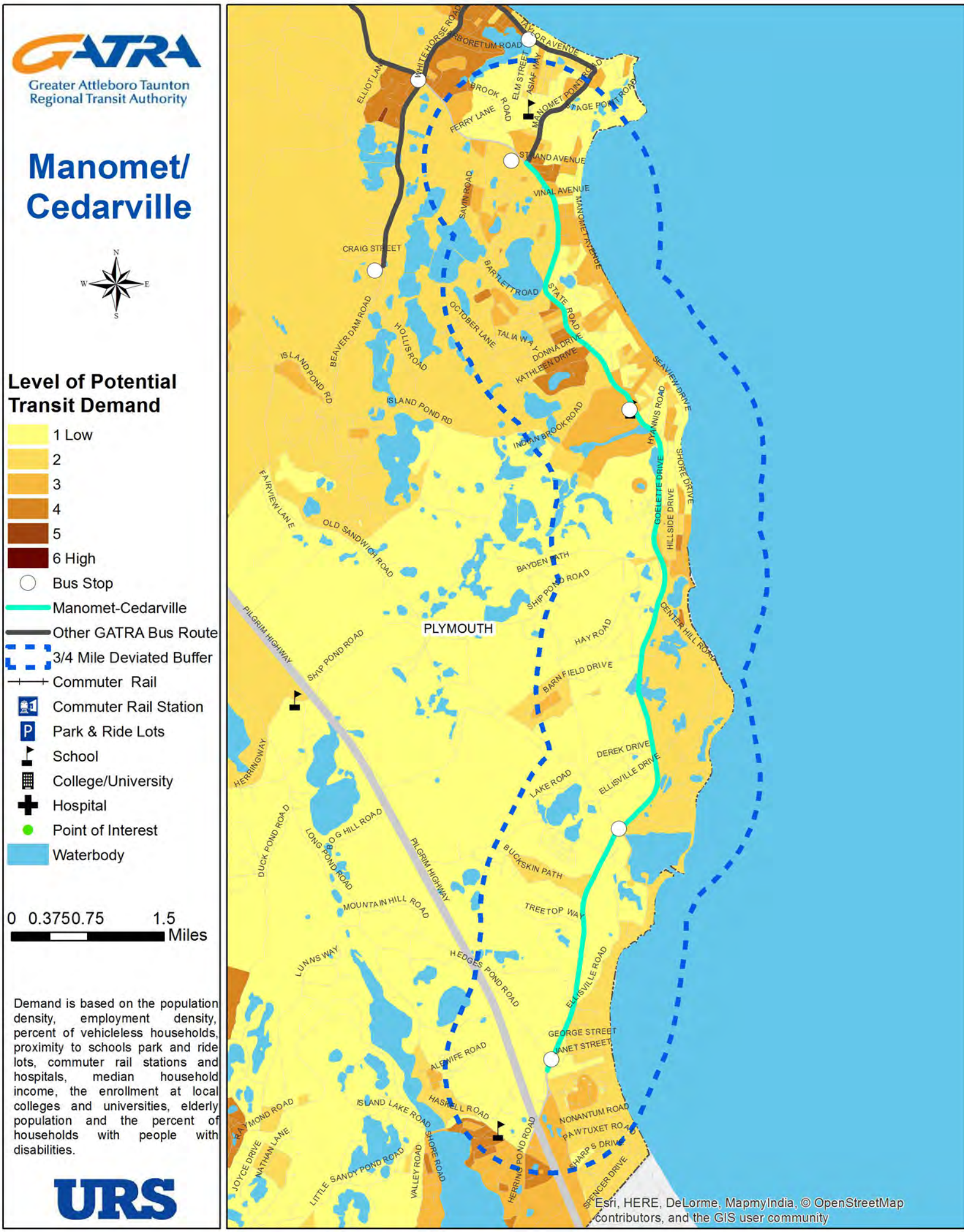
GATRA
Greater Attleboro Taunton Regional Transit Authority
Manomet/ Cedarville
N
W
E
S
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Manomet-Cedarville
Other GATRA Bus Route
3/4 Mile Deviated Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.3750.75 1.5
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
PLYMOUTH
WHITEHORSE ROAD
ARBORETUM ROAD
TAYLOR AVENUE
ELLIOT LANE
BROOK ROAD
FERRY LANE
ELM STREET
ASIAF WAY
MANOMET POINT ROAD
STAGE POINT ROAD
STRAND AVENUE
VINAL AVENUE
SAVIN ROAD
MANOMET AVENUE
CRAIG STREET
BARTLETT ROAD
STATE ROAD
BEAVER DAM ROAD
HOLLIS ROAD
OCTOBER LANE
TALIA WAY
DONNA DRIVE
KATHLEEN DRIVE
SEAVIEW DRIVE
ISLAND POND RD
ISLAND POND RD
INDIAN BROOK ROAD
HYANNIS ROAD
GOELETTE DRIVE
HILLSIDE DRIVE
SHORE DRIVE
FAIRVIEW LANE
OLD SANDWICH ROAD
BAYDEN PATH
SHIP POND ROAD
CENTER HILL ROAD
PILGRIM HIGHWAY
SHIP POND ROAD
HAY ROAD
BARNFIELD DRIVE
HERRINGWAY
DEREK DRIVE
ELLISVILLE DRIVE
LAKE ROAD
DUCK POND ROAD
LONG POND ROAD
BOG HILL ROAD
PILGRIM HIGHWAY
BUCKSKIN PATH
MOUNTAIN HILL ROAD
TREETOP WAY
LUNNS WAY
HEDGES POND ROAD
ELLISVILLE ROAD
GEORGE STREET
JANET STREET
ALEWIFE ROAD
HASKELL ROAD
ISLAND LAKE ROAD
RAYMOND ROAD
NONANTUM ROAD
PAWTUXET ROAD
SHARPS DRIVE
JOYCE DRIVE
NATHAN LANE
LITTLE SANDY POND ROAD
VALLEY ROAD
SHORE ROAD
HERRING POND ROAD
SPENCER DRIVE
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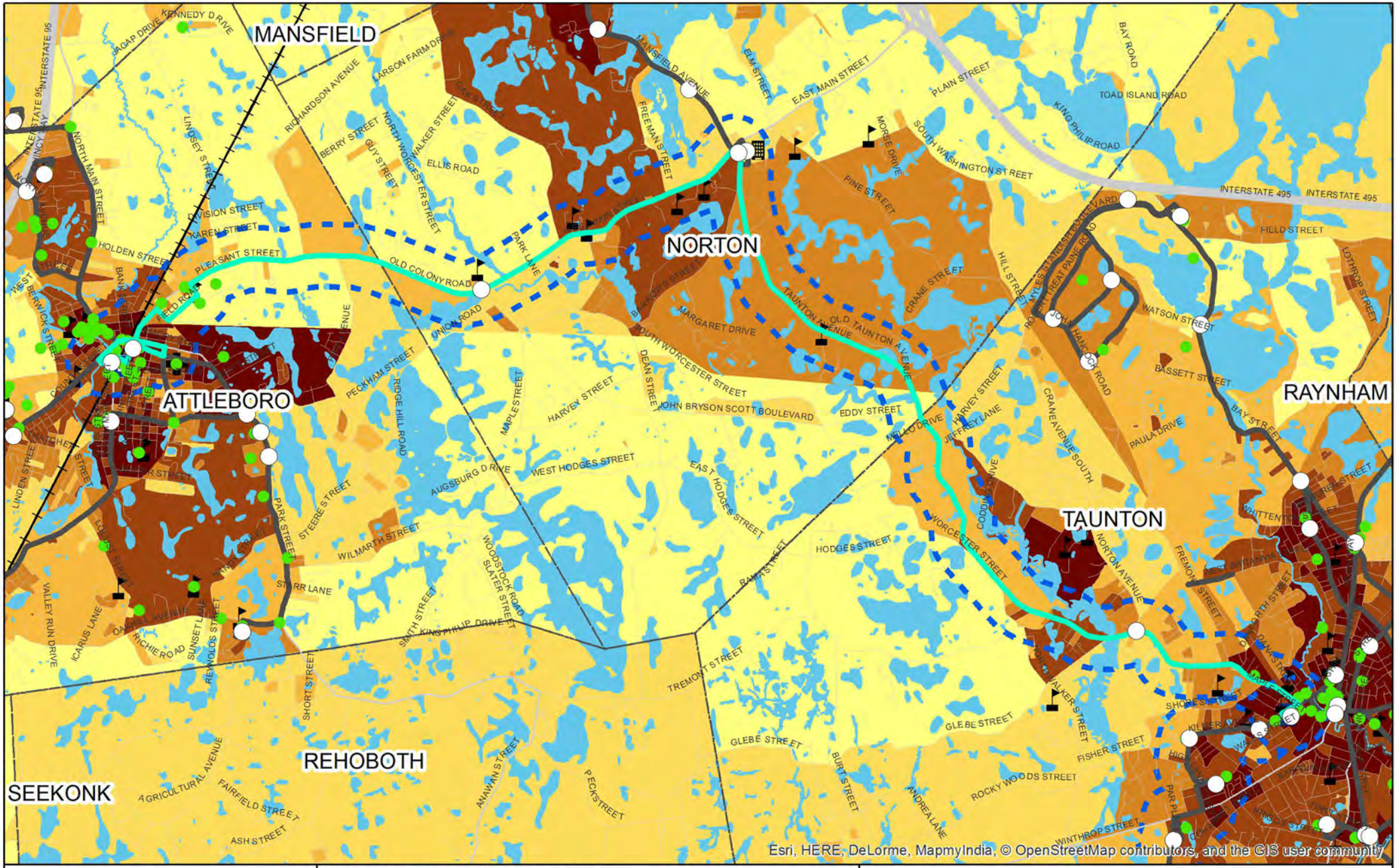


GATRA

Greater Attleboro Taunton Regional Transit Authority

Route 18

Level of Potential Transit Demand

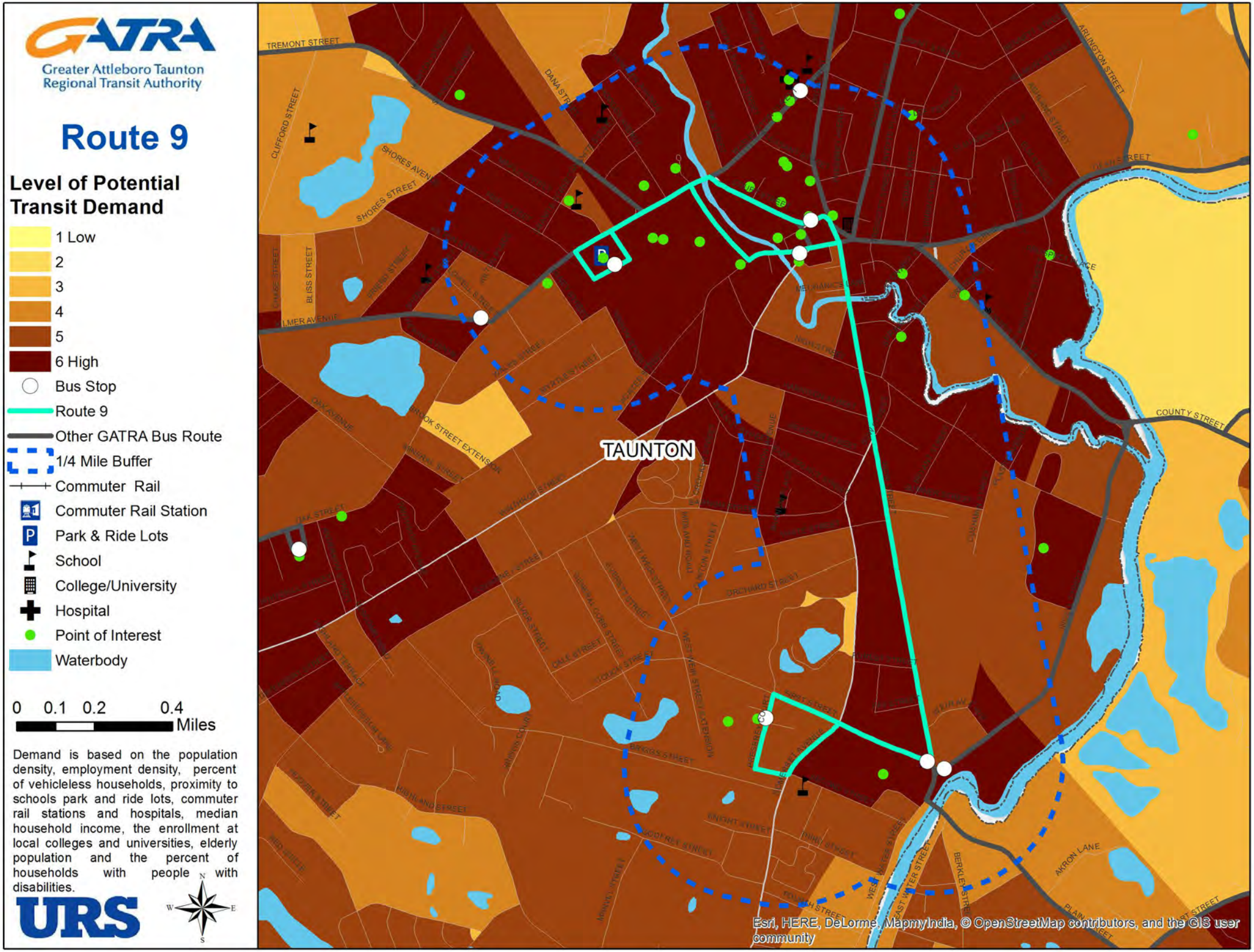
- 1 Low
- 2
- 3
- 4
- 5
- 6 High

- Bus Stop
- Route 18
- Other GATRA Bus Route
- 1/4 Mile Buffer
- Commuter Rail
- Commuter Rail Station
- Park & Ride Lots
- School
- College/University
- Hospital
- Point of Interest
- Waterbody

Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.

0 0.75 1.5 3 Miles

URS


GATRA
Greater Attleboro Taunton Regional Transit Authority
Route 9
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Route 9
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 0.1 0.2 0.4 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
TAUNTON
TREMONT STREET
CLIFFORD STREET
SHORES AVENUE
SHORES STREET
BLISS STREET
ELMER AVENUE
OAK AVENUE
BROOK STREET EXTENSION
WESTMINSTER STREET
OAK STREET
ORCHARD STREET
SILVER STREET
CALE STREET
TOUCH STREET
BRIGGS STREET
HIGHLAND STREET
GODFREY STREET
KNIGHT STREET
WEST WATER STREET
EAST WATER STREET
BERKLEY STREET
AKRON LANE
COUNTY STREET
ARLINGTON STREET
MAIN STREET
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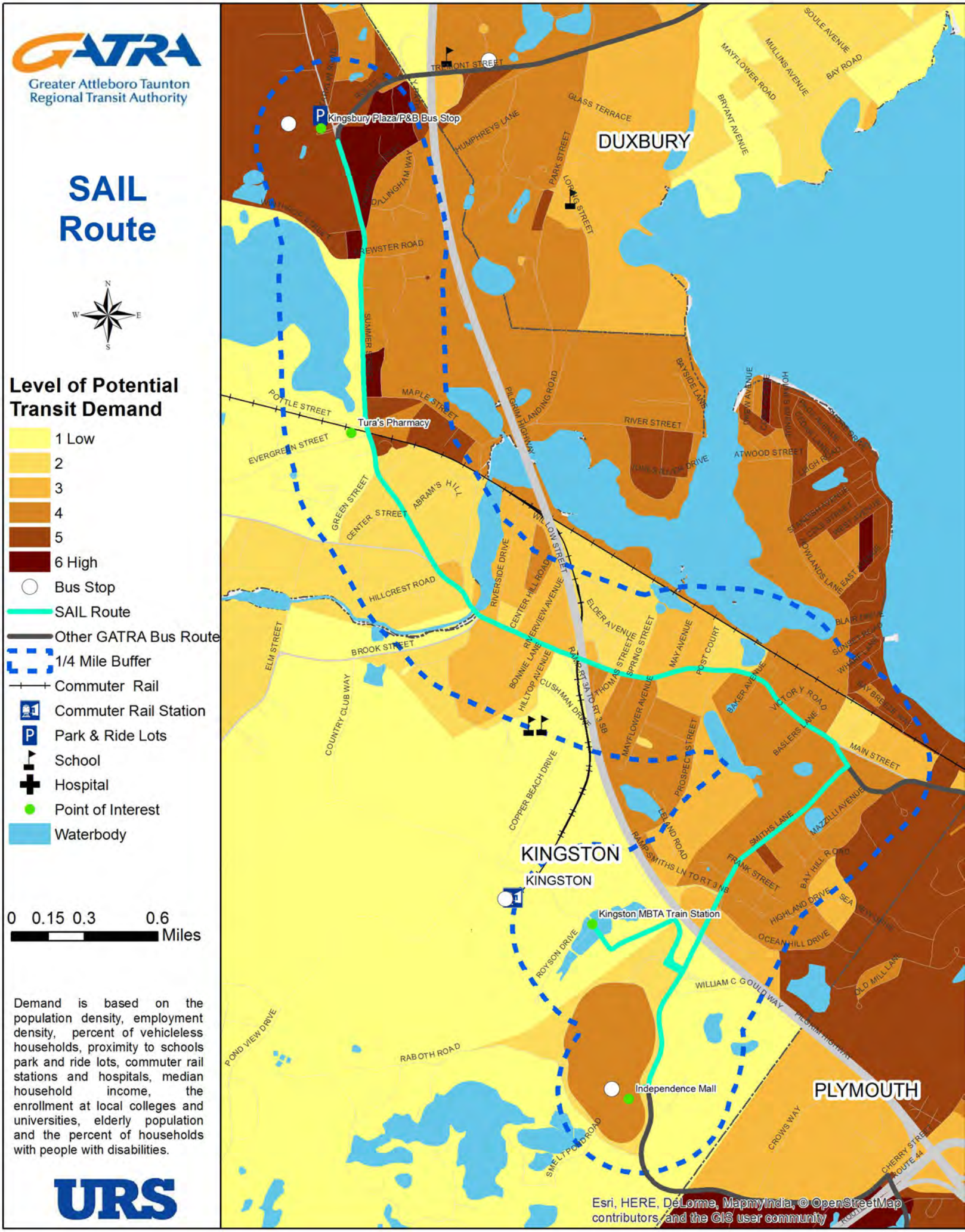
GATRA
Greater Attleboro Taunton Regional Transit Authority
SAIL Route
N
W
E
S
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
SAIL Route
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
Hospital
Point of Interest
Waterbody
0 0.15 0.3 0.6
Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
Kingsbury Plaza/P&B Bus Stop
Tura's Pharmacy
Kingston MBTA Train Station
Independence Mall
DUXBURY
KINGSTON
KINGSTON
PLYMOUTH
TREMONT STREET
GLASS TERRACE
HUMPHREYS LANE
PARK STREET
LORING STREET
DOLLINGHAM WAY
WHITTIER STREET
BREWSTER ROAD
SUMMER STREET
POTTLE STREET
MAPLE STREET
EVERGREEN STREET
GREEN STREET
CENTER STREET
ABRAM'S HILL
PILGRIM HIGHWAY
BAYSIDE LANE
RIVER STREET
ATWOOD STREET
WILLOW STREET
HILLCREST ROAD
RIVERSIDE DRIVE
CENTER HILL ROAD
RIVERVIEW AVENUE
ELDER AVENUE
SPRING STREET
MAY AVENUE
POST COURT
BROOK STREET
ELM STREET
BONNIE LANE
HILLTOP AVENUE
CUSHMAN DRIVE
RAMP RT 3A TO RT 3 SB
THOMAS STREET
MAYFLOWER AVENUE
BAKER AVENUE
VICTORY ROAD
BASLERS LANE
MAIN STREET
PROSPECT STREET
COUNTRY CLUB WAY
COPPER BEACH DRIVE
LELAND ROAD
RAMP SMITHS LN TO RT 3 NB
SMITHS LANE
FRANK STREET
MAZZILLI AVENUE
BAY HILL ROAD
HIGHLAND DRIVE
OCEAN HILL DRIVE
ROYSON DRIVE
WILLIAM C GOULD WAY
OLD MILL LANE
POND VIEW DRIVE
RABOTH ROAD
SMELTPOND ROAD
CROWS WAY
CHERRY STREET
ROUTE 44
SOULE AVENUE
MULLINS AVENUE
BAY ROAD
MAYFLOWER ROAD
BRYANT AVENUE
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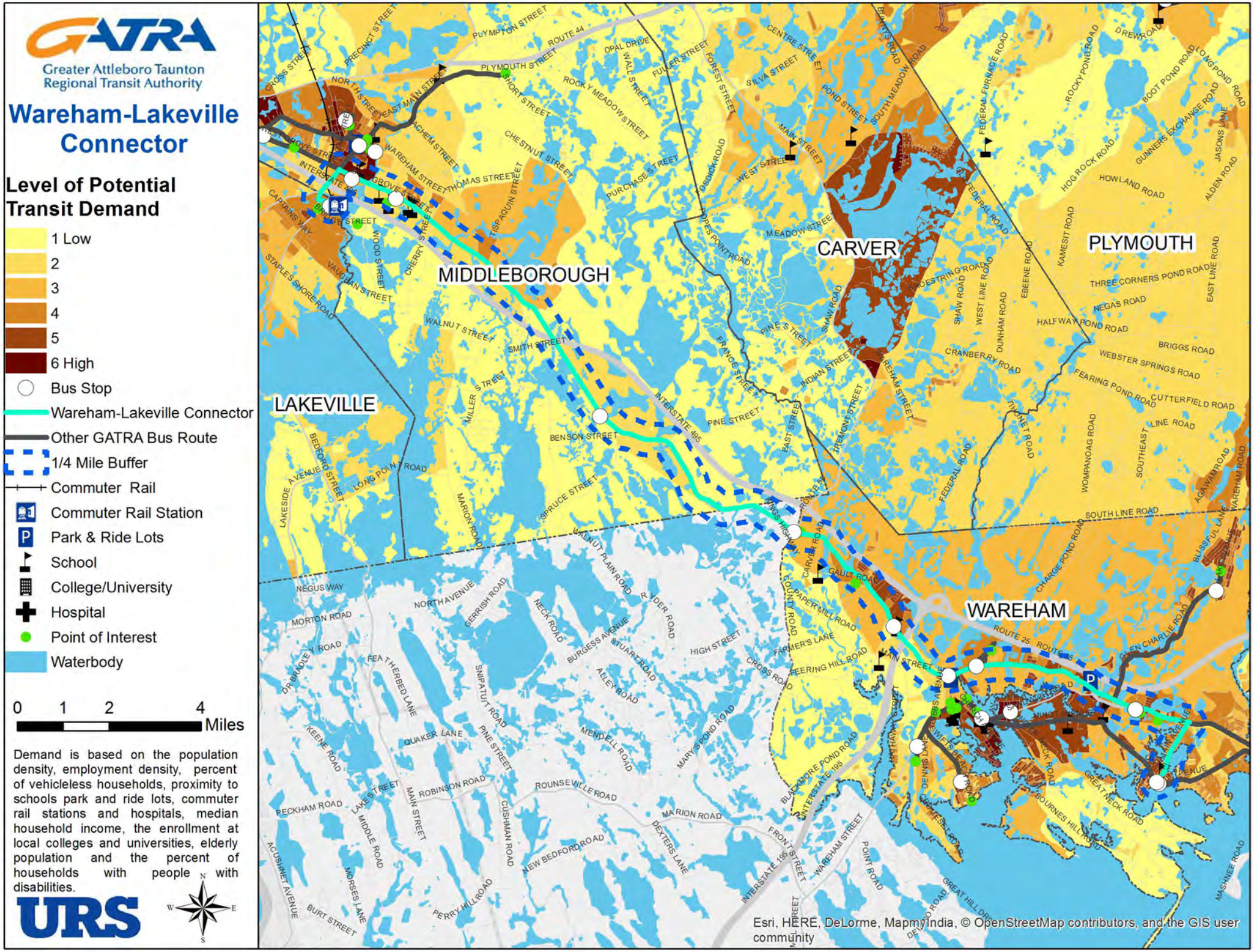
GATRA
Greater Attleboro Taunton Regional Transit Authority
Wareham-Lakeville Connector
Level of Potential Transit Demand
1 Low
2
3
4
5
6 High
Bus Stop
Wareham-Lakeville Connector
Other GATRA Bus Route
1/4 Mile Buffer
Commuter Rail
Commuter Rail Station
Park & Ride Lots
School
College/University
Hospital
Point of Interest
Waterbody
0 1 2 4 Miles
Demand is based on the population density, employment density, percent of vehicleless households, proximity to schools park and ride lots, commuter rail stations and hospitals, median household income, the enrollment at local colleges and universities, elderly population and the percent of households with people with disabilities.
URS
N
W
E
S
MIDDLEBOROUGH
LAKEVILLE
CARVER
PLYMOUTH
WAREHAM
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Appendix B
Recommendation Memo

Southeastern Regional Planning & Economic Development District
88 Broadway ◆ Taunton, MA 02780-2557

Acushnet
Attleboro
Berkley
Carver
Dartmouth
Dighton
Fairhaven
Fall River
Freetown
Lakeville
Mansfield
Marion
Mattapoisett
Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Attleboro/North Attleborough

January 28, 2015

Proposed Alternative: Extend regular service on Route 10

Service Recommendation: Extend the regular service on Route 10 along Elm Street to North Washington Street to Chestnut Street to current routing.

Reason for Recommendation: The Route 10 could better serve downtown North Attleborough with this change in routing.

Proposed Alternative: Reroute 24 to Bristol Place

Service Recommendation: Reroute service on County Street to US-1A and terminate at Mayfair Plaza

Reason for Recommendation: US-1A is not currently served by fixed route transit between the Rhode Island state line and US-1. Rerouting the Route 24 to County Street eliminates duplicate service along South Avenue and provides regular fixed route transit service with connections along US-1A, the South Attleboro MBTA station and the Bristol Place shopping center.

Proposed Alternative: Reroute Route 18 to serve Sensata campus

Service Recommendation: Field Road to Perry Avenue to East Access Road to Pleasant Street.

Reason for Recommendation: The Sensata campus is not currently served by fixed route transit however the workforce generates a demand for transit.

Proposed Alternative: Eliminate service to Plainville Council on Aging after 4PM

Service Recommendation: Eliminate service to the Plainville Council on Aging after 4PM.

Reason for the Recommendation: The Plainville Council on Aging closes at 3:30PM and therefore does not require regular service after closing.

Current Attleboro Bus Routes

- Route 10 Attleboro/ North Attleborough
- Route 11 South Attleboro Connector
- Route 12 Attleboro/S. Attleboro/ North Attleborough
- Route 14 Attleboro/ Plainville
- Route 15 Oak Hill
- Route 16 Attleboro/ Seekonk
- Route 18 Taunton/ Norton/Attleboro
- Route 24 Attleboro/ Pawtucket, RI

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)
- Housing
- Point of Interest

0 1 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Attleboro/North Attleborough Proposed Route 10

North Attleborough

Circle Court

Tower Plaza

N. Attleborough Housing Auth.

Town Hall

Elm Terrace

North Attleborough C.O.A.

Stop & Shop

Fisher College

Tri-boro Plaza

CVS Plaza

Bishop Feehan HS

Emerald Square Mall

Attleboro

Attleboro District Court

Attleboro YMCA

Attleboro Public Library

C.O.A

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

Points of Interest

Housing

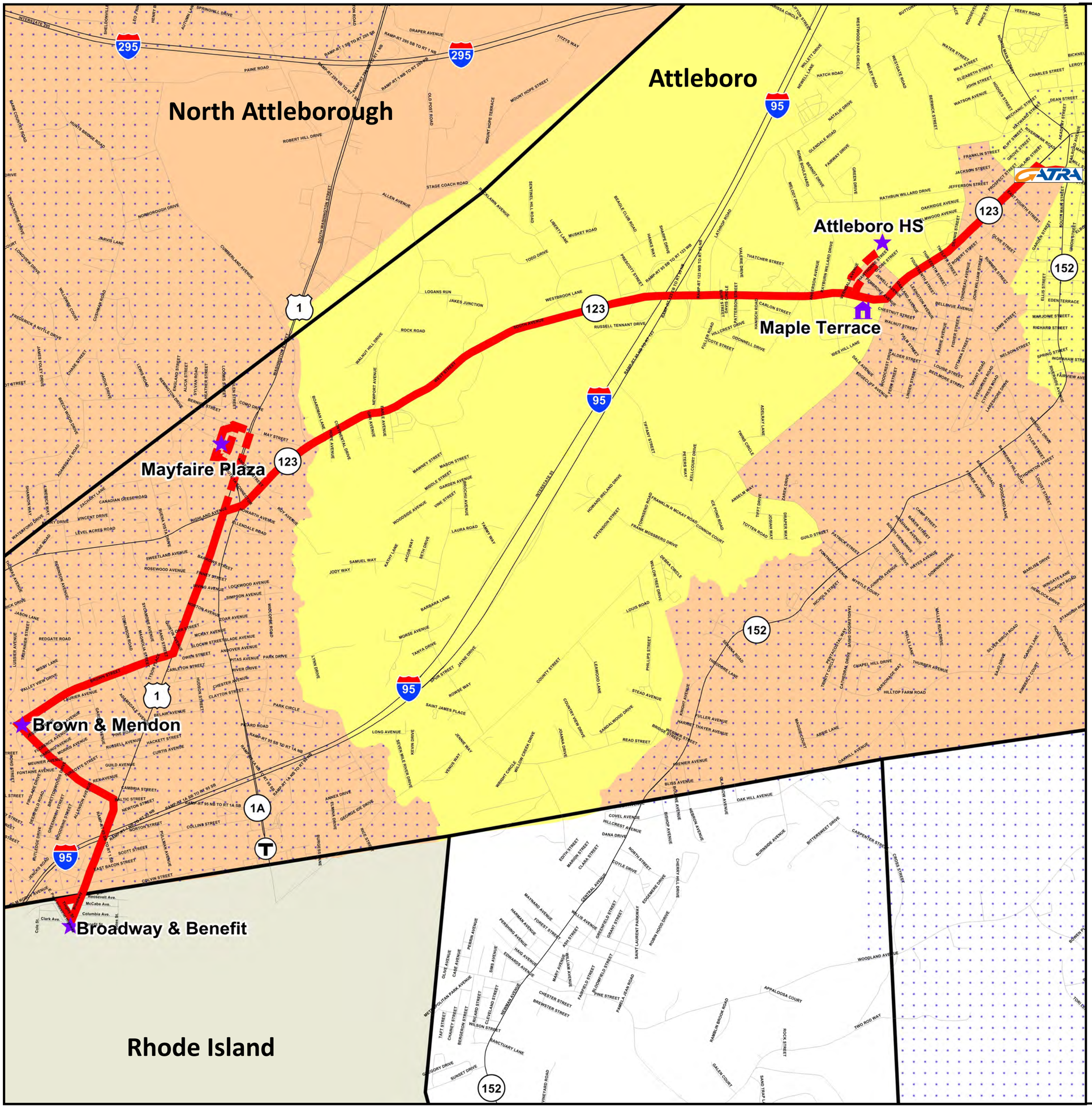
0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Attleboro Route 24 Attleboro/ Pawtucket, RI



Environmental Justice

- Minority
- Minority & Low Income
- LEP
  (Limited English Proficiency)

- Points of Interest
- Housing

0 .5
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD
GATRA

Attleboro Proposed Route 24 to Bristol Place

North Attleborough

Attleboro

Rhode Island

Attleboro HS

Maple Terrace

Attleboro Industrail Park

Mill Stream Village

Birchwood Mobil Home Park

Bristol Place

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

- Points of Interest
- Housing

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Attleboro Proposed Option B Route 24 to Bristol Place & Mayfaire Plaza

North Attleborough

Attleboro

Rhode Island

Attleboro HS

Maple Terrace

Attleboro Industrail Park

Mill Stream Village

Birchwood Mobil Home Park

Mayfaire Plaza

Bristol Place

GATRA

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

- Points of Interest
- Housing

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD

GATRA

Taunton/Attleboro Route 18
Proposed Route 18
to Sensata Technologies

Environmental Justice

- Minority
- Minority & Low Income
- LEP
  (Limited English Proficiency)
- Points of Interest

0 .75
Miles

N

SRPEDD
GATRA

Minority:
2010 Census Tracts > 7.31%
Low Income:
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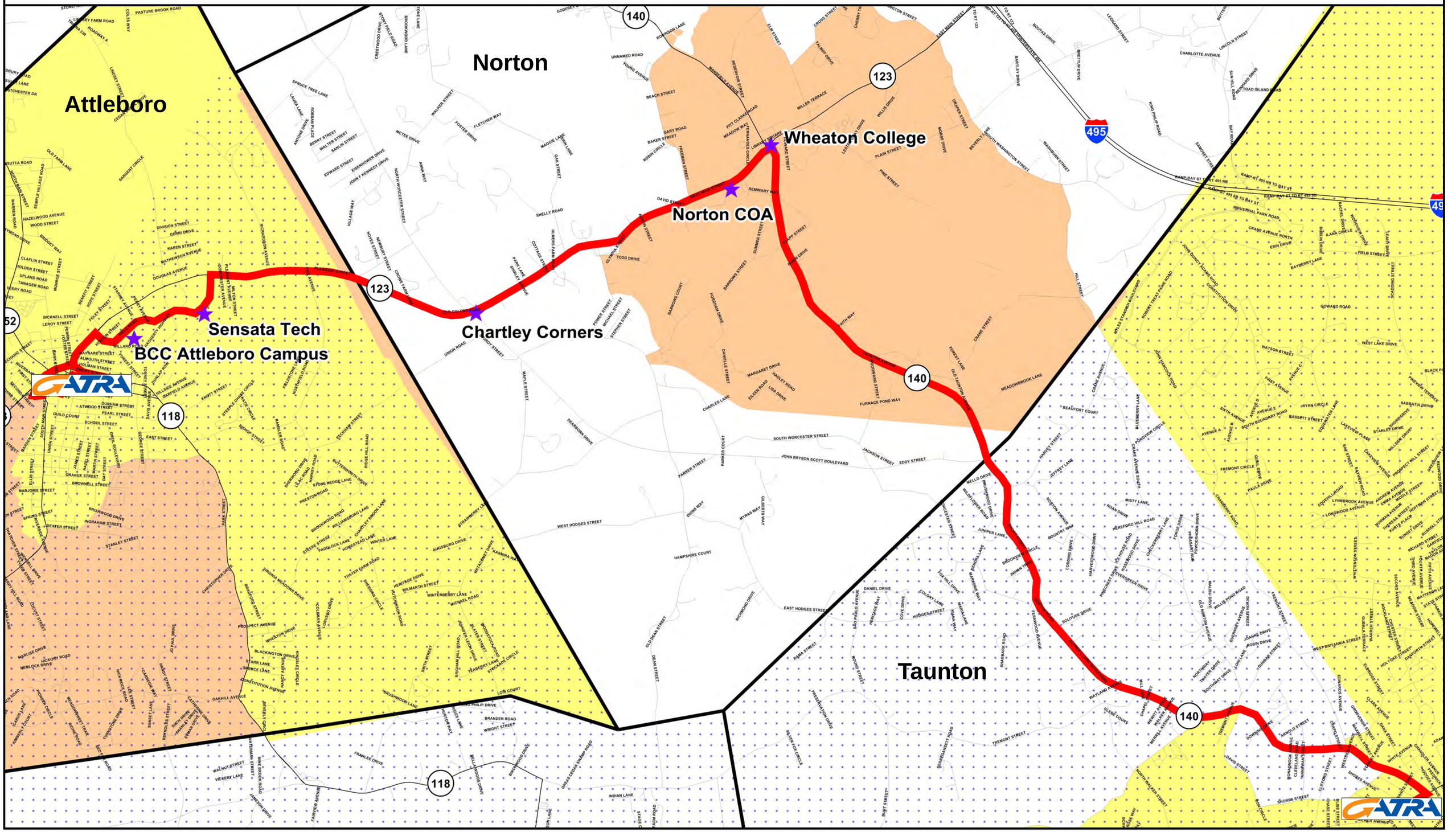
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%



Southeastern Regional Planning & Economic Development District
88 Broadway ◆ Taunton, MA 02780-2557

Acushnet
Attleboro
Berkley
Carver
Dartmouth
Dighton
Fairhaven
Fall River
Freetown
Lakeville
Mansfield
Marion
Mattapoisett
Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Bellingham

January 28, 2015

Proposed Alternative: Increase availability of parking for the Bellingham T Shuttle

Service Recommendation: Find a suitable parking area at the southern terminus of the Bellingham South T Shuttle. Available parking has been identified at:

Stop & Shop – 70 Pulaski Boulevard

Empty parking lot - 295 Pulaski Boulevard

SRPEDD identified that the lot is owned by a JEC Realty LLC and appears to be unused and undeveloped.

Reason for Recommendation: Permitting parking at the end of the shuttle line may encourage increased use of the shuttle system and eliminate further needs for the MBTA to expand parking capacity at the Forge Park MBTA station.

Proposed Alternative: Add mid-day service to the Bellingham Shuttle

Service Recommendation: Pilot mid-day service on the Bellingham Shuttle with service to Market Basket and Wal-Mart

Reason for Recommendation: Current service only operates in the morning and evening and caters to MBTA commuters. During the mid-day hours, residents do not have a transit option to travel; extending the service hours to include trips between 7:45AM and 4:20PM will provide access to grocery stores, pharmacies, retail stores, medical offices, etc. Mid-day service was included as a recommendation in the *MAPC SWAP Regional Public Transit Feasibility Study*, dated October 3, 2013.

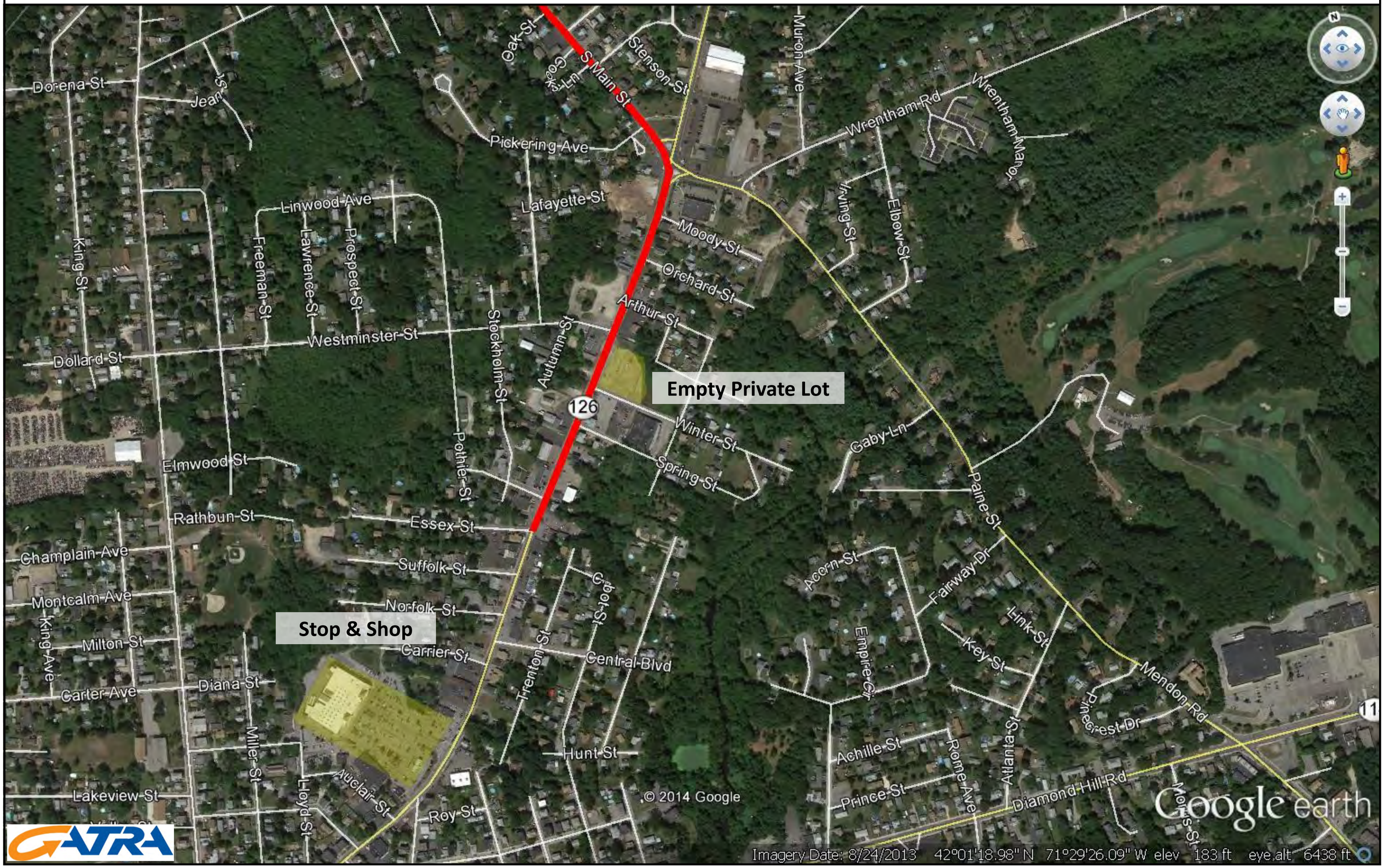
Proposed Alternative: Expand subscription commuter service service

Service Recommendation: Eliminate current North and South MBTA Shuttles and replace with an expanded subscription service.

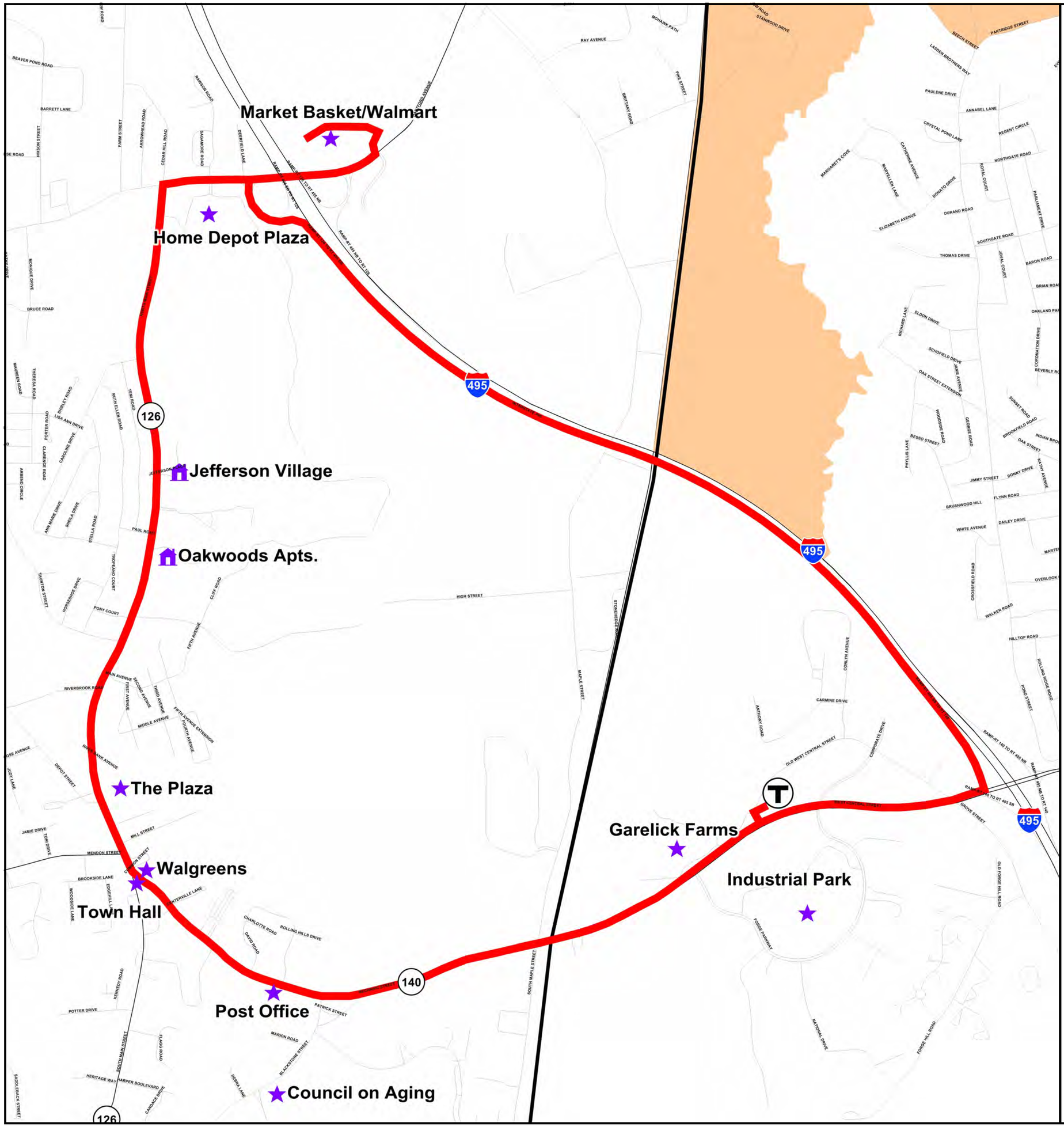
Reason for Recommendation: Expanding the subscription service in a modified demand response will could improve commuter connections to the MBTA Forge Park station and make the service more convenient for riders. Subscription service could be offered as a curb to curb option, or with defined stops

South Bellingham T Shuttle

Potential Park and Ride Lots



Proposed Bellingham North Shuttle to Market Basket/ Walmart



Environmental Justice

Minority

Points of Interest

Housing

0 .3 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Southeastern Regional Planning & Economic Development District
88 Broadway ◆ Taunton, MA 02780-2557

Acushnet
Attleboro
Berkley
Carver
Dartmouth
Dighton
Fairhaven
Fall River
Freetown
Lakeville
Mansfield
Marion
Mattapoisett
Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Foxborough

January 28, 2015

Proposed Alternative: Service to Plainridge Park Casino

Service Recommendation: Provide regular service between Patriot's Place and Plainridge Park Casino either with a separate route between Plainville Commons and Patriot Place, or by extending the Attleboro Route 14.

Reason for Recommendation:Plainridge Park Casino will generate a demand for transit service and Patriots Place can provide a transfer to the Tri-Town Connector.

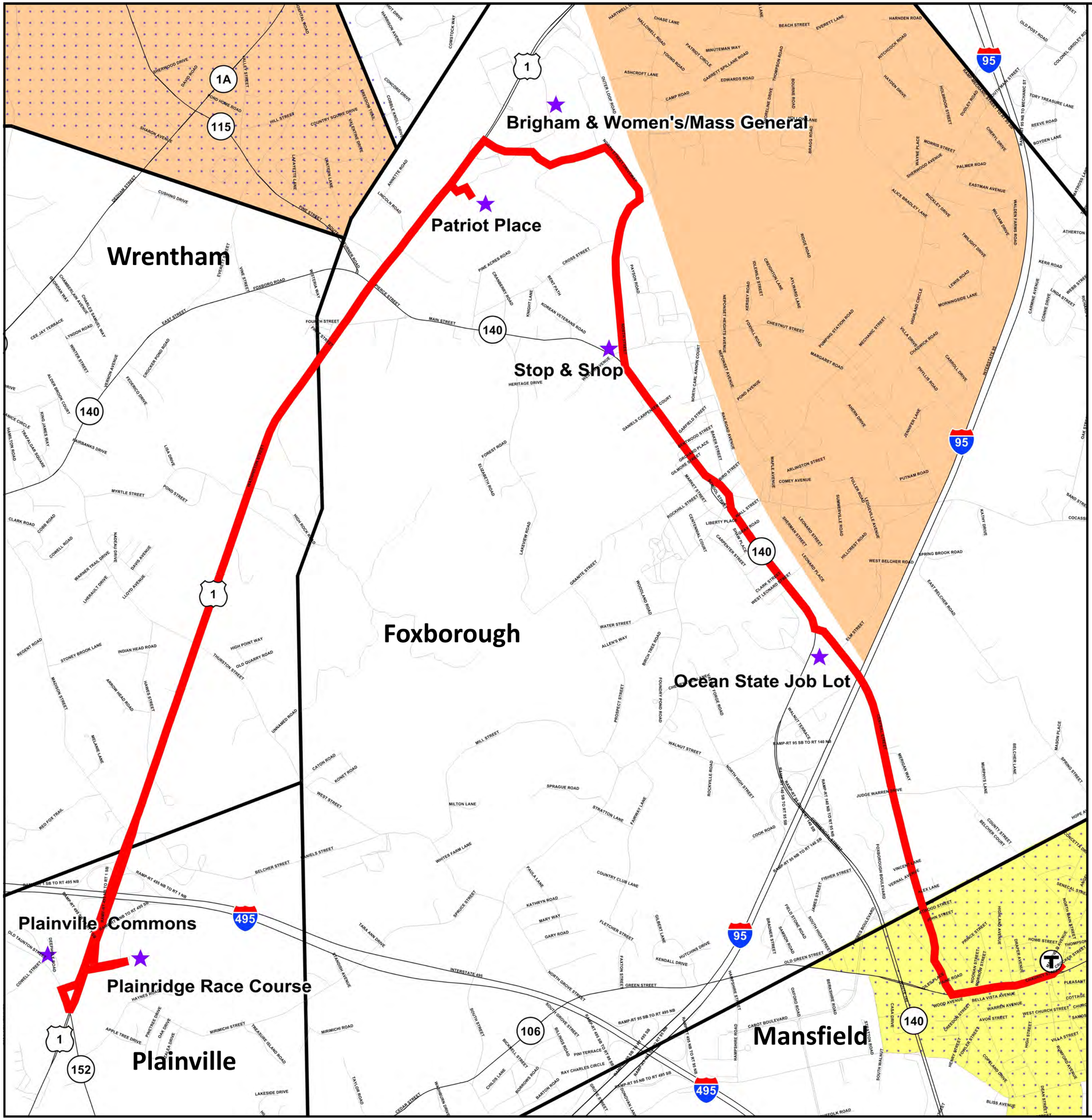
Proposed Alternative: Service between Mansfield MBTA and Patriots Place

Service Recommendation: Service begins at Mansfield MBTA to Central Street to MA-140 to Baker Street to Chestnut Street to North Street to Putnam Parkway. Service may either terminate at Patriots Place or continue to Plainridge Park Casino.

Reason for Recommendation: The proposed route is being considered as a service alternative as part of a Metropolitan Area Planning Council study for the town of Foxborough.

Foxborough Proposed Route

Option A
Mansfield / Foxborough / Plainville



Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

★ Points of Interest

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Foxborough Proposed Route

Option B
Foxborough / Mansfield

Brigham & Women's/Mass General

Patriot Place

Stop & Shop

Ocean State Job Lot

Foxborough

Mansfield

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

★ Points of Interest

0 .3 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Southeastern Regional Planning & Economic Development District
88 Broadway ◆ Taunton, MA 02780-2557

Acushnet
Attleboro
Berkley
Carver
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Fairhaven
Fall River
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Marion
Mattapoisett
Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Franklin/Norfolk

January 28, 2015

Proposed Alternative: Serve EMC Campus on Constitution Boulevard with Franklin Area Bus

Service Recommendation: Leaving MBTA, continue on Union Street to King Street turn onto Constitution Blvd. Use Upper Union Street to return to King Street and continue to Central Park Terrace and return to current routing.
Reason for Alternative: Providing service to EMC and surrounding businesses will expand opportunities for commuter transit use. The Franklin MBTA station provides access to the MBTA Commuter Rail service to Boston.

Proposed Alternative: Serve YMCA on Forge Hill Road with Franklin Area Bus

Service Recommendation: Use Central Street to Grove Street to Forge Hill Road, serve YMCA and use same routing to return to regular route.
Reason for Recommendation: The Franklin Area Bus provides service to Franklin High School and the Horace Mann Middle School, including the YMCA as a stop can provide safe, reliable transportation between the school and the YMCA and can cater to youth after school programs.

Proposed Alternative: Serve Magnolia Heights Senior Living Home with Franklin Area Bus

Service Recommendation: Continue on Chestnut Street to Chestnut Ridge Cir and return to current routing.
Reason for Recommendation: The Magnolia Heights Senior Living Home is not currently served by fixed route transit and has the potential to generate ridership.

Tri-Town Connector Recommendations:

Signage and Wayfinding

- Improve signage at Norfolk MBTA Commuter Rail Station
- Improve signage at Patriot's Place

Market Research & Outreach

- Survey area residents to gauge interest and demand for transit
  - Coordinate with Norfolk Housing Authority to reach residents at Hillcrest Village and Pine Knoll
  - Coordinate with Wrentham Housing Authority to reach residents at Garden Lane
- Conduct outreach through the Massachusetts Correctional Institution at Norfolk to provide information to employees and visitors

Advertising and Promotion

- Sell advertising on interior and exterior of the vehicle
- Provide promotional free ride programs

Current Franklin Area Bus Route

- Southbound
- Northbound
- Saturday Only
- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)
- Points of Interest
- Housing

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Market Basket/Walmart
Whole Foods/Old Navy
Tri-County RVTHS
Franklin H.S.
Eaton Place
Horace Mann M.S.
Council on Aging
Village Plaza
Dean College
Franklin Public Library
Glen Meadow Apts.
Horace Mann Plaza
Magnolia Heights
Big Y
Union Square Apts.
Central Park Terrace
Forge Park Industrial Park
YMCA
Bellingham
Franklin

Proposed Franklin Option A

Minority

Minority & Low Income

LEP
(Limited English Proficiency)

Points of Interest

Housing

0 .5
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Market Basket/Walmart
Whole Foods/Old Navy
Franklin H.S.
Eaton Place
Horace Mann M.S.
Council on Aging
Village Plaza
Forge Park Industrial Park
YMCA
Franklin Public Library
Dean College
Glen Meadow Apts.
Horace Mann Plaza
Magnolia Heights
Big Y
Union Square Apts.
Central Park Terrace
EMC

Bellingham
Franklin

Proposed Franklin Option B

Minority

Minority & Low Income

LEP
(Limited English Proficiency)

Points of Interest

Housing

0 .5
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Market Basket/Walmart

Whole Foods/Old Navy

Franklin H.S.

Eaton Place

Horace Mann M.S.

Council on Aging

Village Plaza

Forge Park Industrial Park

YMCA

Franklin Public Library

Dean College

Glen Meadow Apts

Horace Mann Plaza

Magnolia Heights

Big Y

Union Square Apts.

Central Park Terrace

EMC

Bellingham

Franklin

Proposed Franklin Option C

Minority

Minority & Low Income

LEP
(Limited English Proficiency)

Points of Interest

Housing

0 .5
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Market Basket/Walmart
Whole Foods/Old Navy
Franklin H.S.
Eaton Place
Horace Mann M.S.
Council on Aging
Village Plaza
Forge Park Industrial Park
Franklin Public Library
Dean College
Glen Meadow Apts
Horace Mann Plaza
Magnolia Heights
Big Y
Union Square Apts.
Central Park Terrace
YMCA
EMC
Bellingham
Franklin

Southeastern Regional Planning & Economic Development District
88 Broadway ◆ Taunton, MA 02780-2557

Acushnet
Attleboro
Berkley
Carver
Dartmouth
Dighton
Fairhaven
Fall River
Freetown
Lakeville
Mansfield
Marion
Mattapoisett
Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Hanover/Pembroke

January 28, 2015

Proposed Alternative: Develop a new fixed route service to Hanover Mall

Service Recommendation:

Option A: Originate service at Stop & Shop/ Kohls and use MA-139 to MA-53 to Broadway to Spring Street to Hanover Street to MA-53 to terminate at the Hanover Mall.

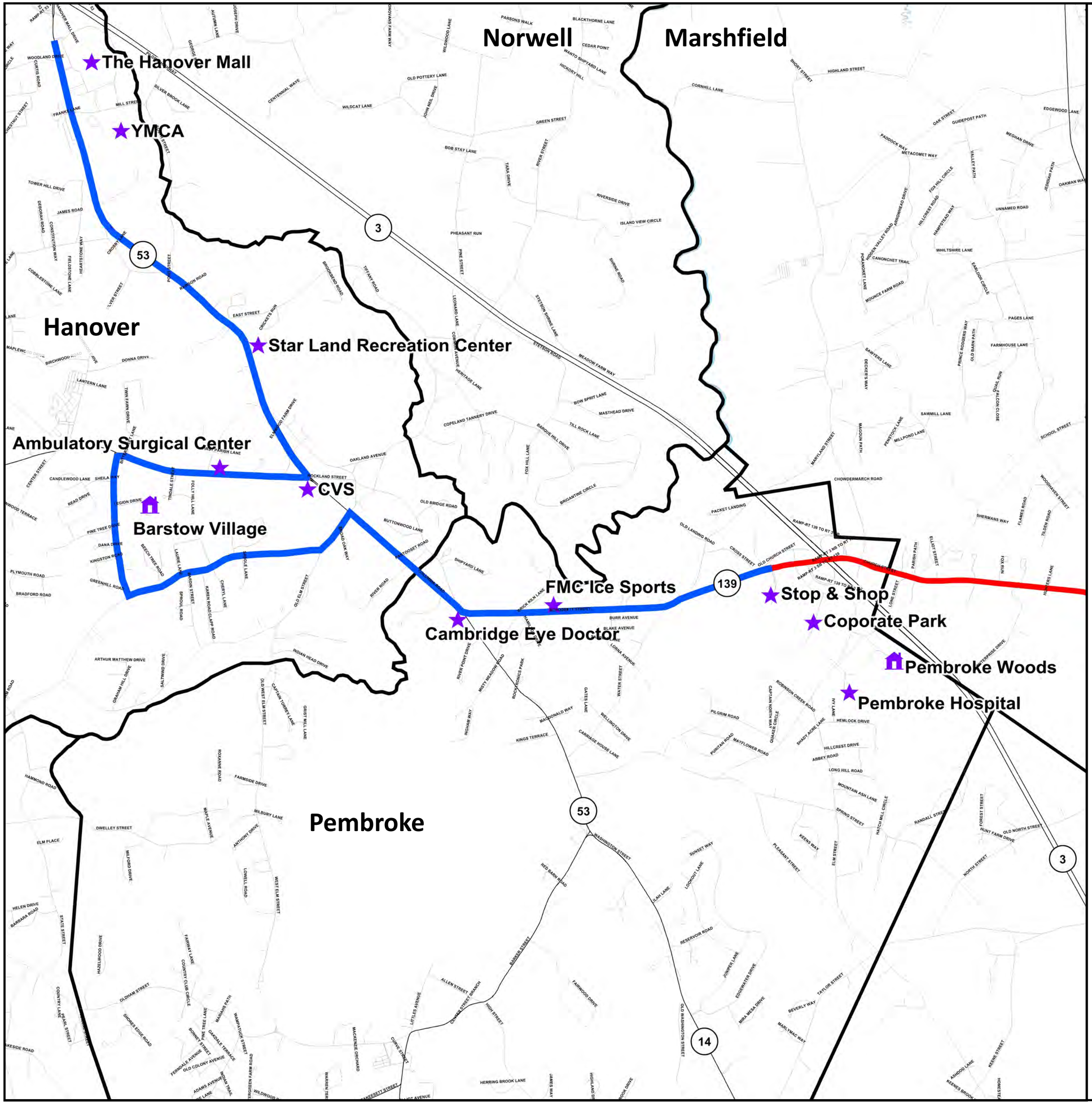
Option Aa: Extend the SAIL to provide service along the Option 2 alignment.

Option B: Meet the Pembroke Shuttle at the Community Center Parking Lot stop and use MA-14 to MA-139 to MA-53 to Broadway to Spring Street to Hanover Street to MA-53 to terminate at the Hanover Mall.

Reason for Recommendation: Hanover is not currently served with fixed route transit service.

Hanover Proposed Route

Option A



Existing Marshfield/ Duxbury/Kingston

Proposed Hanover Route Option A

Points of Interest

Housing

0 .75 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Hanover Proposed Route

Option B

Norwell

Marshfield

The Hanover Mall

YMCA

Hanover

Star Land Recreation Center

Ambulatory Surgical Center

CVS

Barstow Village

FMC Ice Sports

Cambridge Eye Doctor

Stop & Shop

Coporate Park

Pembroke Woods

Pembroke Hospital

Pembroke

Community Center Parking

- Existing Marshfield/ Duxbury/Kingston Route
- Existing Pembroke Shuttle
- Proposed Hanover Route Option A

- Points of Interest
- Housing

0 .75 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Southeastern Regional Planning & Economic Development District
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N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Kingston/Duxbury/Marshfield

January 28, 2015

Proposed Alternative: Split the SAIL Route into two separate routes

Service Recommendation: Split the route at Webster Square Shopping Center located at Ocean Street and Webster Street

South Route: Webster Street to MA-139 and return to current route to the south.

North Route: Maintain current routing east of Webster Street and terminate at MA-139 and Beach Street.

Northern Terminus Options:

Maintain current terminus at Stop & Shop / Kohls

Extend route to Hanover Mall via MA-139 to MA-53

Extend route and merge with Pembroke Shuttle route

Reason for Recommendation: The SAIL ridership is underperforming and it is suspected that the headways are inconvenient. Splitting the route will permit shorter headways and more travel options for riders.

Current Marshfield/ Duxbury/ Kingston Bus Route

Stagestop Village Apts
Royal Dane Apts.
The Village Apts.
Stop & Shop
Edgewood Village Apts.
Christmas Tree Shop
Roche Brothers
Marshfield
Winslow Village I & II
Webster Square
Tea Rock Housing
Prence Grant Senior Housing
Brant Rock/Post Office
Senior Center
Green Harbor Post Office
Duxbury
Millbrooks Motors
Percy Walker Pool
Library
Senior Center
Halls Corner/Foodie's
Duxbury Housing Authority Complex
Kingston Plaza
Island Creek
Kinston
Tura's Pharmacy
Cordage Park
Plymouth
Independence Mall

3A 139 3 14 53 27 106 80

Current Marshfield/ Duxbury/Kingston Route

Current Plymouth Routes

Environmental Justice

- Minority
- Low Income
- Minority & Low Income
- LEP (Limited English Proficiency)

Housing

Point of Interest

0 1 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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GATRA

Kingston/ Duxbury/ Marshfield

Option A

Marshfield

Christmas Tree Shop

Marshfield HS/Furnance Brook MS

Stop & Shop

Roche Brothers

Pembroke

Duxbury

Percy Walker Pool

Duxbury School Complex

Library

Senior Center

Hall's Corner

Duxbury Housing Authority

Island Creek

Kingsbury Plaza/P&B Bus Stop

Tura's Pharmacy

Kingston

Plymouth

Independence Mall

- Proposed Kingston/ Duxbury Route
- Proposed Marshfield Route
- Existing Plymouth Route

Environmental Justice

- Minority
- Low Income
- Minority & Low Income
- LEP (Limited English Proficiency)

- Points of Interest
- Housing

0 1 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Kingston/ Duxbury/ Marshfield

Option B

- Proposed Kingston/ Duxbury Route
- Proposed Marshfield/ Hanover Route
- Existing Plymouth Route

Environmental Justice

- Minority
- Low Income
- Minority & Low Income
- LEP (Limited English Proficiency)

- Points of Interest
- Housing

0 1.5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

The Hanover Mall
YMCA
Star Land Recreation Center
Ambulatory Surgical Center
CVS
Christmas Tree Shop
Stop & Shop
FMC Ice Sports
Marshfield HS/Furnance Brook MS
Barstow Village
Coporate Park
Roche Brothers
Pembroke Woods
Percy Walker Pool
Duxbury School Complex
Library
Senior Center
Hall's Corner
Duxbury Housing Authority
Island Creek
Kingsbury Plaza/P&B Bus Stop
Tura's Pharmacy
Independence Mall
Hanover
Marshfield
Pembroke
Duxbury
Kingston
Plymouth

Kingston/ Duxbury/ Marshfield

Option C

Proposed Kingston/ Duxbury Route

Proposed Marshfield/ Pembroke Route

Existing Plymouth Route

Environmental Justice

Minority

Low Income

Minority & Low Income

LEP
(Limited English Proficiency)

Points of Interest

Housing

0 1
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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Marshfield
Christmas Tree Shop
Stop & Shop
Marshfield HS/Furnance Brook MS
Roche Brothers
Pembroke Woods
Pembroke
Community Center Parking
Duxbury
Percy Walker Pool
Duxbury School Complex
Library
Senior Center
Hall's Corner
Duxbury Housing Authority
Island Creek
Kingsbury Plaza/P&B Bus Stop
Tura's Pharmacy
Kingston
Plymouth
Independence Mall
139
3
14
53
27
3A
106
80
44

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Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Mansfield/Norton

January 28, 2015

Proposed Alternative: Route 140 service to the Cabot Industrial Park

Service Recommendation: From Mansfield MBTA to Copeland Drive to Forbes Boulevard to West Street to MA-140 to School Street to Mansfield Crossing to School Street to East Street to current routing and eliminate service between East Street and Chauncy Street on Main Street. Alternative routing could include the aforementioned routing as a loop departing and returning to the Mansfield MBTA.

Reason for Recommendation: The Cabot Industrial Park is a major employment center currently not served with fixed route transit service. Mansfield Crossing is a large shopping center not currently served with fixed route transit service.

Proposed Alternative: Route 140 service to Bicentennial Court Public Housing

Service Recommendation: From Mansfield MBTA Pratt Street to East Street to Hope Street to Mansfield MBTA

Reason for Recommendation: The Bicentennial Court Public Housing caters to low-income seniors and is currently not served by fixed route transit.

General Recommendations

Schedule for Route 140 should read “Roche Bros.” instead of “Great Woods Plaza”

The moniker is confusing and many locals interpret the route to serve the Xfinity Center which was once named “Great Woods”

A bus shelter is recommended at the Sports Authority in Mansfield Crossing Shopping Center.

Proposed Wheaton T Shuttle/ Route 140 to Cabot Business Park

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

★ Points of Interest

Cabot Business Park

Mansfield Crossing

Great Woods Plaza

Commuter Lot

Wheaton College

Mansfield

Norton

0 .3 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Medway

January 28, 2015

Proposed Alternative*:* Increase capacity of Medway T Shuttle

Service Recommendation: Add vehicle to travel from the fire station in Medway (Route 109 and Summer St.) east on Route 109 to Millis and then travel Route 115 south to the Norfolk MBTA station.

Reason for Recommendation: The shuttle operates at or near capacity and that future growth will require additional passenger capacity.

Proposed Alternative: Designate stops along Village Street

***Service Recommendation*:** Designate stops along Village Street.

***Reason for Recommendation*:** Designating stop locations along Village Street will improve safety for passengers.

Proposed Medway Route

Current Medway Route

Proposed Medway Route

Minority

Low Income

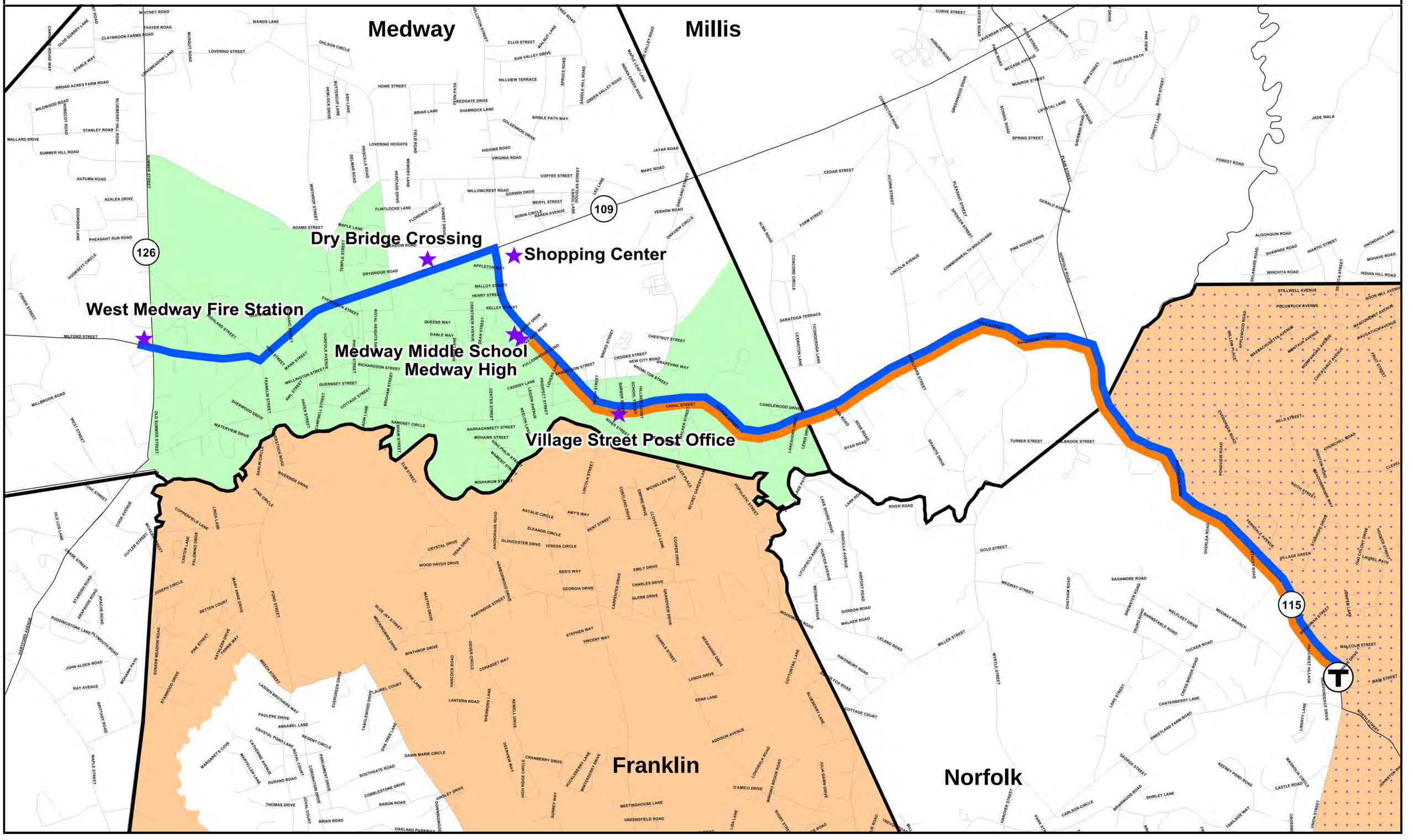
LEP
(Limited English Proficiency)

Points of Interest

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%



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Plainville
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Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Middleborough

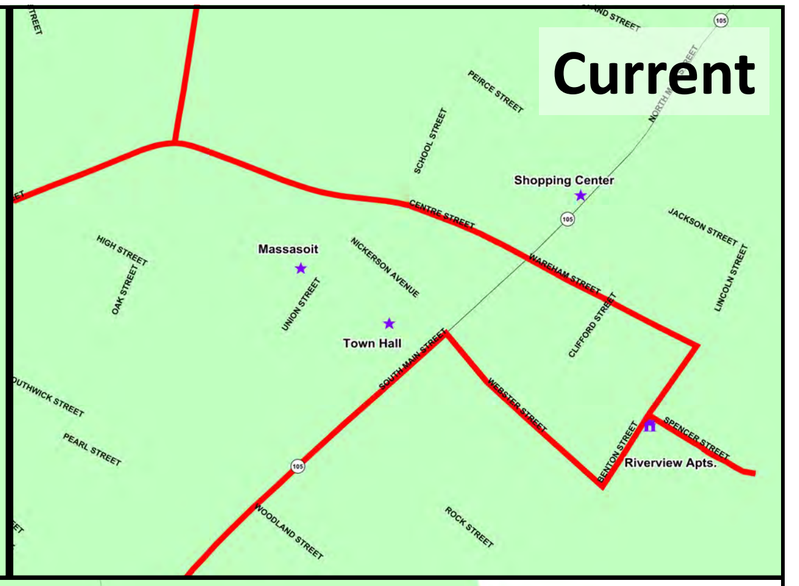
January 28, 2015

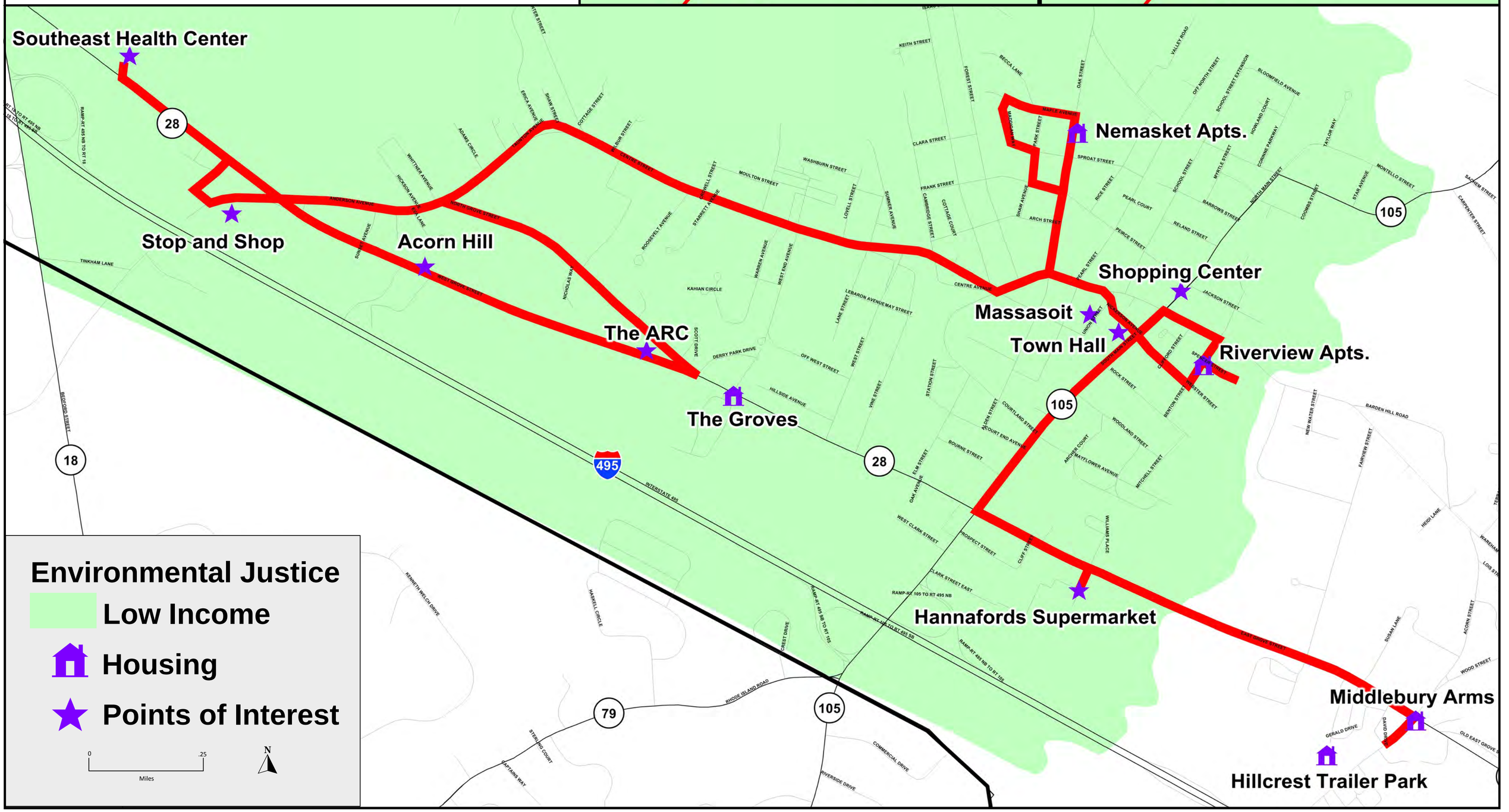
Proposed Alternative: Improve service to Massasoit Community College – Middleborough Campus

Service Recommendation: Reroute from Center Street to Union Street to Nickerson Avenue to South Main Street and eliminate service on Center Street between Union Street and South Main Street.

Reason for Recommendation: Massasoit Community College – Middleborough Campus is not directly served with fixed route transit service. Providing direct access to the campus should help to increase student ridership.

Proposed Middleborough Shuttle to Massasoit Community College





Southeastern Regional Planning & Economic Development District
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Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Plainville

January 28, 2015

Proposed Alternative: Service to Plainville Commons and Plainridge Park Casino

Service Recommendation: Service to Plainville Commons and Plainridge Park Casino.

Reason for Recommendation: Plainville Commons is a shopping center located on US-1 and is not currently served with fixed route transit. Plainridge Park Casino, when open, will be located on the opposite side of US-1 from Plainville Commons and is expected to generate a demand for transit.

Proposed Plainridge Route

Option A

Plainville Commons Marketplace

Plainridge Race Course

Plainville

Plainville Crossing

Willow Trace Apts

North Attleborough

N. Attl. HS

Industrial Park

N. Attl. MS

Triboro Plaza

Bishop Feehan HS

Attleboro

Environmental Justice

- Minority
- Minority & Low Income
- LEP
  (Limited English Proficiency)

- Points of Interest
- Housing

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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Proposed Plainridge Route

Option B to Patriot Place

Environmental Justice

- Minority
- Minority & Low Income
- LEP
  (Limited English Proficiency)

- Points of Interest
- Housing

Wrentham
Foxborough
Plainville
North Attleborough
Patriot Place
Plainridge Race Course
Plainville Crossing
Willow Trace Apts
N. Attl. HS
N. Attl. MS
Industrial Park
Triboro Plaza
Bishop Feehan HS

0 1
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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Marion
Mattapoisett
Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Plymouth

January 28, 2015

Proposed Alternative: Extend Link 3 to meet Plymouth Mayflower Link

Service Recommendation: Extend the Link 3 using Wareham Road to Long Pond Road to Clark Road to Beaver Dam Road

Reason for Recommendation: A multi-phase 6000+ acre master planned community is in development along Wareham Road which will include a village center south of Halfway Pond Road. This route would also provide fixed route transit service to the Pinehills community in Plymouth.

Proposed Alternative: Designate stops in Plymouth Center

Service Recommendation: Designate stops in Plymouth Center.

Reason for Recommendation: Designating stops in Plymouth Center will make it easier for tourists to make use of the bus. It will also improve efficiency by eliminating frequent stops in a congested area.

Current Plymouth Bus Routes

Cordage Park
Independence Mall
Industrial Park
Walmart
Algonquin Heights Apts.
Plymouth Center
Plymouth Rock
W. Plymouth Plaza
Library
Exit 5 P&B Bus Stop
Home Depot Plaza
Shops at 5
Long Pond Medical Center
Yankee Village
Plimoth Plantation
White Horse Beach
Gellar's
Manomet Stop & Shop
Woodcrest Apt.
Ellisville Harbor State Park
Cedarville Bruno's Corner

Liberty/Freedom Links
Mayflower Link
Manomet/Cedarville Deviated Link
Manomet/Cedarville Deviation

Environmental Justice
Minority
Minority & Low Income
Low Income
LEP
(Limited English Proficiency)

Housing
Point of Interest

0 1.5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
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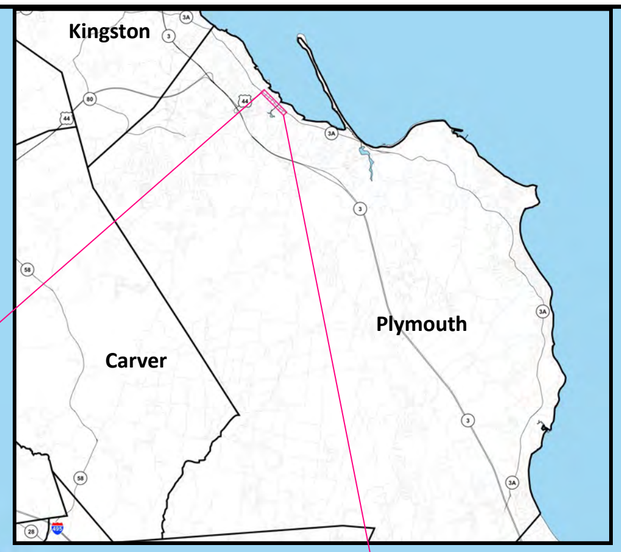
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Plymouth Proposed No Flag Stop Zone



Mayflower Link

Freedom/Liberty Links

N

0 1.5 Miles

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Plainville
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Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Scituate

January 28, 2015

Proposed Alternative: Scituate Shuttle

Service Recommendation: Town circulator shuttle beginning at the Scituate Town Hall with service along First Parish Road, Stockbridge Road, Brook Street, Harborwalk, Kent Street, Driftway, Scituate MBTA, and MA-3A terminating at Town Hall.

Reason for Recommendation: Scituate is not currently served with fixed route transit service and this route would provide reliable transit service to residents and visitors.

Proposed Scituate Route

Central Park Senior Housing

Lawson Tower

Scituate High School

Gates School

Cudworth House

Historical Society

Town Hall/Police Station

Village Marketplace

Town Marina

Harborwalk

Post Office

Senior Center

Wheeler Park Senior Housing

Kent Village Apartments

Greenbush Field

MBTA Station

Widow's Walk Golf Course

Stockbridge Mill

Irish Mossing Museum

Driftway Conservation Area

3A

123

0 .3 Miles

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Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Seekonk/Rehobeth/Dighton

January 28, 2015

Proposed Alternative: Connect Taunton to East Providence via US-44

Service Recommendation: Develop a new route that travels US-44 originating at the Taunton Terminal terminating at Commercial Way in East Providence, RI.

Reason for Recommendation: The US-44 corridor is not currently served by fixed route transit and providing a connection between Taunton and East Providence will increase transit mobility for the region.

Southeastern Regional Planning & Economic Development District
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Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Taunton/Raynham

January 15, 2015

Proposed Alternative: Route 1

Service Recommendation: Combine Route 1 and Route 9 with service to Warner Boulevard Hannaford's Supermarket on every trip and rerouting from Weir Street to Somerset Avenue.

Reason for Recommendation: The proposed realignments of the Route 9 will better serve Somerset Avenue.

Proposed Alternative: Eliminate Route 3

Service Recommendation: Eliminate Route 3

Reason for Recommendation: Route 3 is duplicated by Route 6 and Route 8 service

Proposed Alternative: Service to Market Basket and Wal-Mart on MA-138

Service Recommendation: A new route from the Bloom Terminal with service on MA-138 to Market Basket and Wal-Mart

Reason for Recommendation: Market Basket and Wal-Mart generate demand for fixed route transit and are not currently served with fixed route transit.

Proposed Alternative: Extend Route 6 to John Hancock Road and Fremont Street

Service Alternative: Extend the Route 6 along John Hancock Road to Fremont Street to Bassett Street to Bay Street to current routing to terminal.

Reason for Alternative: The Perkins Company located at John Hancock Road and Fremont Street is not currently served by fixed route transit and generates a demand.

Proposed Alternative: Eliminate Pine Hills Estates from Route 7

Service Alternative: Eliminate Pine Hills Estates as a stop on Route 7 and add to Route 8 as a deviation

Reason for Recommendation: Route 7 and Route 8 both serve Wal-Mart and South Street. Eliminating Pine Hills Estates from Route 7 and serving with Route 8 will eliminate duplicate service on South Street.

Proposed Alternative: Extend Route 9 to Railroad Avenue

Service Recommendation: Reroute from Weir Street to Somerset Avenue and continue to Railroad Avenue to South Street

Reason for Recommendation: Somerset Avenue south of Second Street is not currently served with fixed route transit. Extending the Route 9 to meet the Route 1 at Railroad Avenue will increase transit options and connectivity for riders.

Current Taunton Bus Routes

- Route 1 Westside
- Route 3 Silver City/ Myles Standish IP
- Route 6 Whittenton
- Route 7 School St./ Raynham
- Route 8 E. Taunton/ Walmart
- Route 9 Weir/Route 138
- Route 18 Taunton/ Norton/Attleboro

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

- Housing
- Point of Interest

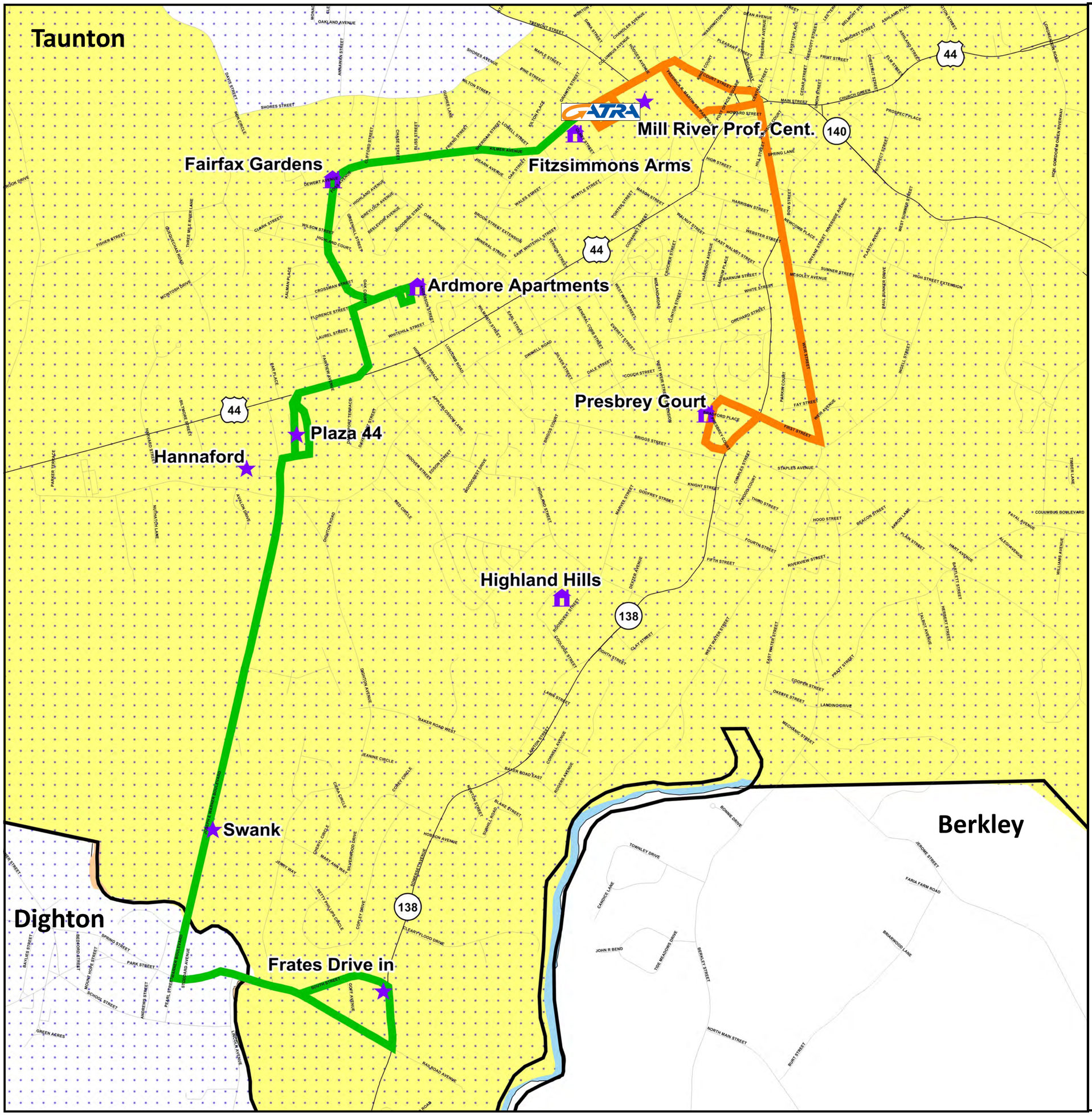
0 .75 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD GATRA

Taunton Current Routes 1-Westside & 9-Weir/Rt. 138



Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

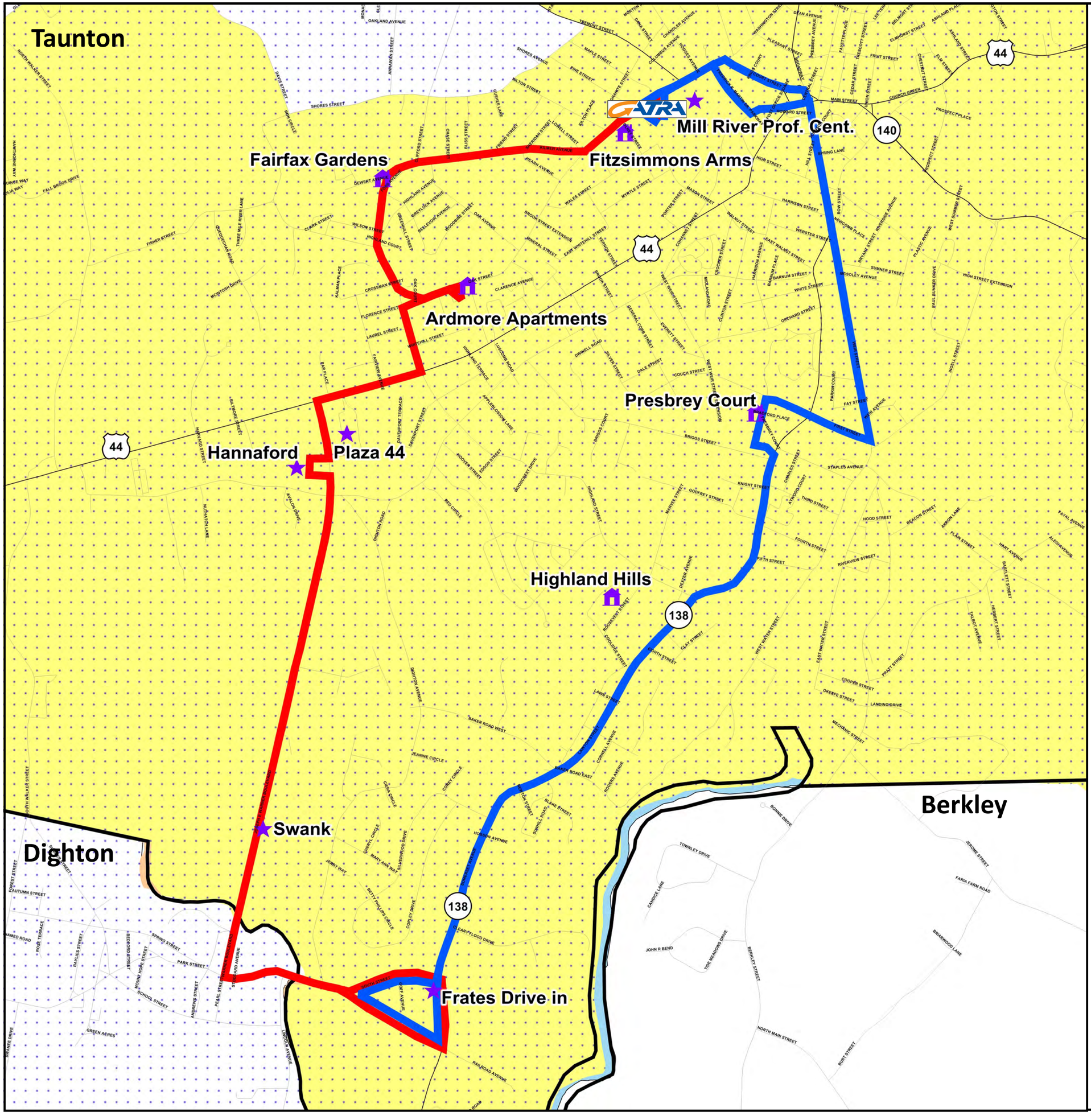
- Points of Interest
- Housing

0 .3 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD
GATRA



Taunton Proposed Routes 1-Westside & 9-Weir / Rt. 138

Option A

Route 1—Westside

Route 9—Weir / Rt. 138

Environmental Justice

Minority

Minority & Low Income

LEP
(Limited English Proficiency)

Points of Interest

Housing

0 .3 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Taunton Proposed Routes 1-Westside & 9-Weir / Rt. 138

Option B

Taunton

GATRA Mill River Prof. Cent.

Fitzsimmons Arms

Fairfax Gardens

Ardmore Apartments

Presbrey Court

Plaza 44

Hannaford

Highland Hills

Swank

Frates Drive in

Dighton

Berkley

Route 1—Westside

Route 9—Weir / Rt. 138

Environmental Justice

Minority

Minority & Low Income

LEP
(Limited English Proficiency)

Points of Interest

Housing

0 .3
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD

GATRA

Taunton/Raynham Proposed Route to Walmart and Market Basket

Market Basket

Walmart

Pinewood Terrace

Raynham Housing Authority

Walgreens

James T. Thomas Apts

Cedarville Homes

School Street Apts.

Fitzsimmons Arms

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

- Housing
- Point of Interest

0 .3 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

SRPEDD

GATRA

Proposed Route 6 Whittenton

Current Route 6

Current Route 6 Deviations

Proposed Route 6 Industrial Park Deviation to Perkins

Environmental Justice

Minority

Minority & Low Income

LEP
(Limited English Proficiency)

Point of Interest

Northwoods Medical

Myles Standish I.P.

Perkins

Taunton High School

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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Proposed
Route 7
School St./Raynham
&
Route 8
East Taunton/
Raynham/Walmart

James T. Thomas Apts
Cedarville Homes
School Street Apts.
Stop & Shop
Shaw's Plaza
Route 44 Medical Walk-In
Cape Roads Plaza
Walmart
Cojean Plaza
Taunton High School
City Hall
DTA/MRC
Pine Grove Apartments
Riverside Apts
Robertson on the River
Riverview Meadows
Pine Hill Estates
Caswell Grove
Martin Middle School
Taunton Gardens
Taunton Depot
Taunton Crossing
Taunton Woods
Rt 140 Industrial Park
Silver City Galleria Mall

Proposed Route 7
Proposed Route 8

Environmental Justice

Minority

Minority & Low Income

LEP
(Limited English Proficiency)

Housing

Point of Interest

0 .5 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
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Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

Southeastern Regional Planning & Economic Development District
88 Broadway ◆ Taunton, MA 02780-2557

Acushnet
Attleboro
Berkley
Carver
Dartmouth
Dighton
Fairhaven
Fall River
Freetown
Lakeville
Mansfield
Marion
Mattapoisett
Middleborough
New Bedford
N. Attleborough
Norton
Plainville
Raynham
Rehoboth
Rochester
Seekonk
Somerset
Swansea
Taunton
Wareham
Westport

GATRA Regional Transit Plan

Proposed Service Alternatives:

Wareham

January 28, 2015

Proposed Alternative: Hourly Service on Saturday

Service Recommendation: Provide hourly service on Saturday on all Wareham Link Routes

Reason for Recommendation: Several comments were received from the public that hourly service on Saturday is desired.

Proposed Alternative: Wareham Link 4 Regular Service to Rosebrook Medical Center

Service Recommendation: Eliminate the regular service to the YMCA and continue as a request only deviation and provide regular service to Rosebrook Medical Center

Reason for Recommendation: The YMCA does not generate regular ridership to justify continued service, where as the Rosebrook Medical Center does receive regular requests for service, which causes the bus to deviate and operate behind schedule. This change will improve on-time performance of the Wareham Link 4

Proposed Alternative: Extend Link 3 to meet Plymouth Mayflower Link

Service Recommendation: Extend the Link 3 using Wareham Road to Long Pond Road to Clark Road to Beaver Dam Road

Reason for Recommendation: A multi-phase 6000+ acre master planned community is in development along Wareham Road which will include a village center south of Halfway Pond Road. This route would also provide fixed route transit service to the Pinehills community in Plymouth.

Proposed Alternative: Relocate the Wareham Hub

Service Recommendation: Identify a new hub location in Wareham and reroute Wareham Links to meet at the new hub

Reason for Recommendation: The Cranberry Plaza shopping center is losing Wal-Mart as its anchor tenant, which generated the demand for transit and the need to locat the hub at Cranberry Plaza. A relocated hub will provide improved access through Wareham.

Current Wareham Bus Routes

Court House
Millbrook Nursing Home
Wareham Crossing
YMCA
Mill Pond
Wareham Library
Wareham Center
Agawam Village
Wareham Plaza
Multi Service Cnt.
Cromeset
Swifts Beach Rd/Grant St.
Tedeschi's
Cranberry Plaza
Water Wizz
Onset Pier
Buzzards Bay
Bourne Park & Ride

Link 1
Link 2
Link 3
Link 4

Environmental Justice

Minority
Minority & Low Income
LEP
(Limited English Proficiency)

Housing
Point of Interest

0 1
Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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Proposed Wareham Routes With Commuter Rail Hub

Court House
Millbrook Nursing Home
Wareham Crossing
YMCA
Mill Pond
Wareham Library
Wareham Plaza
Wareham Center
Agawam Village
Cranberry Plaza
Water Wizz
Multi Service Cnt.
Cromeset
Swifts Beach Rd/Grant St.
Onset Pier
Tedeschi's
Buzzards Bay
Bourne Park & Ride

- Link 1
- Link 2
- Link 3
- Link 4

Environmental Justice

- Minority
- Minority & Low Income
- LEP (Limited English Proficiency)

- Housing
- Point of Interest

0 1 Miles

N

Minority:
2010 Census Tracts > 7.31%
Low Income:
2005-2009 ACS Tracts> 5.21%
Limited English Proficiency:
2005-2009 ACS Tracts > 2.85%

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Appendix C
Public Outreach

PUBLIC OUTREACH

One of the primary goals of the Regional Transit Plan (RTP) is to identify alternatives and recommendations that would result in improvements to the system for existing riders and potentially attract new riders. In order to meet the needs of the riders, GATRA reached out to the public through a series of public meetings, and on-board comment cards in order to better understand what the public's transit needs and priorities are. The public input received from these efforts helped form the goals of the RTP, guide the alternative service scenarios to be examined, and prioritize GATRA service strategies. In addition, GATRA formed a Study Advisory Committee. This committee represented key stakeholder groups within the community and provided review and comment on chapters of the document as they were produced.

Study Advisory Committee

GATRA formed and supported the development of a Study Advisory Committee to guide the development of this plan. Its members included local employers and business members, politicians, the regional planning agency, labor organizations, transit riders and others. A complete list of committee members and the organization/group they represent can be found in Table 1.

Table 1. Study Advisory/Steering Committee Members

Name	Organization
Mike Kelley	Plymouth Career Center
Melissa Vanhorn	UW of Greater Attleboro/Taunton
Fran Grey	Plymouth Career Center
Julie Ensign	North Attleboro HS
Alan Slavin	Town of Wareham
Dick Shafer	Taunton Development Group
Rodney Clark	BCC Attleboro/Taunton
Joe Yasaian	BCC Attleboro/Taunton
Andrea Holleran	Jordan Health System
Sharon Wason	Foxborough Planning Board
Mary E. Burgess	North Attleboro
Jack Leddy	Davol Taunton Printing
Anne Bisson	Taunton Human Services Dept
Kim Lavallee	Wheaton College
Marie Oliva	Cape Cod Canal CoC
Kerrie Babin	Taunton Chamber of Commerce
Kevin J. Dumas	City of Attleboro
Laura DeMattia	Bellingham COA
Karen Alves	Franklin COA
Andrea Priest	Middleboro COA
Joanne Moore	Duxbury COA

Robyn Mitton	Hanover COA
Charles Kilmer	Old Colony Planning Council (OCPC)
Eric Halvorsen	Metropolitan Area Planning Council

Over the course of preparing the RTP, the Study Advisory Committee has met 2 times to discuss the development of the plan in addition to reviewing each chapter and providing feedback. The times, dates, and locations of these meetings can be found in Table 2.

Table 2. Study Advisory/Steering Committee Meetings

Date	Time	Location
02/28/2015	10:30 AM	SRPEDD Office, Taunton, MA
8/25/2015	1:00 PM	Norton Public Library, Norton, MA

Public Involvement

The public outreach component of the Regional Transit Plan incorporated a multi-faceted approach to soliciting public feedback regarding current service and routes, the needs of the traveling public, and suggestions on where to best improve service. Outreach was conducted through a series of public meetings, interviews with transit operators, and public comment cards available on board the GATRA buses.

Public Meetings:
Public meetings were held in two rounds of six meetings each and were held at the following locations on the dates listed:

- September 22, 2014 3PM-6PM – Franklin Town Administration Building, 355 East Central Street, Franklin, MA
- September 23, 2014 3PM-6PM – Wareham Town Administration Building, 54 Marion Road, Wareham, MA
- September 24, 2014 3PM-6PM – Hanover Town Administration Building, 550 Hanover Street, Hanover, MA
- September 29, 2014 3PM-6PM – Plymouth Library, 132 South Street, Plymouth, MA
- September 30, 2014 3PM-6PM – SRPEDD Office, 88 Broadway, Taunton, MA
- October 6, 2014 3PM-6PM – Attleboro Public Library, 74 North Main Street, Attleboro, MA
- January 20, 2015 3PM-5PM – SRPEDD Office, 88 Broadway, Taunton, MA
- January 21, 2015 3PM-5PM – Franklin Town Administration Building, 355 East Central Street, Franklin, MA
- January 22, 2015 3PM-5PM – Attleboro Public Library, 74 North Main Street, Attleboro, MA
- February 3, 2015 3PM-5PM – Wareham Town Administration Building, 54 Marion Road, Wareham, MA
- February 4, 2015 3PM-5PM – Hanover Town Administration Building, 550 Hanover Street, Hanover, MA
- March 18, 2015 10AM-11AM – Plymouth Council on Aging, GATRA Consumer Advisory Committee meeting, 44 Nook Road, Plymouth, MA
- March 25, 2015 10AM-11AM – Wareham Council on Aging, GATRA Consumer Advisory Committee meeting, 48 Marion Road, Wareham, MA

At each of the first round of public meetings, SRPEDD gave a brief PowerPoint presentation explaining the purpose of the meeting, the goals of the regional transit plan, and a brief history of GATRA service in the area relevant to the meeting location. After the presentation was concluded, a conversation was initiated with those in attendance to garner feedback on: the quality of the customer experience and how it may be improved, the areas that are served well and should not be altered, the areas that are not currently served and should be served, and any additional information or insight which may benefit GATRA service.

At each of the second round of public meetings, SRPEDD presented large format maps of service alternatives for attendees to view, which was followed by a brief PowerPoint presentation explaining the purpose of the meeting, a summary of the work to date, and each of the service alternatives relevant to the area in which the meeting was held. After the presentation concluded, a conversation was initiated with those in attendance to garner feedback on the alternatives that were presented.

In addition to the first round of public meetings, SRPEDD placed comment cards on the buses with instructions to the public to provide feedback on their needs and the service they wish to see continued or discontinued. The comment cards were open ended and all comments that were collected were transcribed and cataloged based on the location they were collected.

SRPEDD conducted a series of interviews with each of the operators of the GATRA service.

Summary of Feedback

The feedback received through the public meetings and the operator interviews included general system wide comments, route specific comments including existing routes and proposed service alternatives, and town or region specific comments. The operator interviews provided insight into operating efficiencies that could be gained through service changes. The public meetings provided insight into areas where service is adequate and should remain unchanged and areas where service is inadequate or deficient and should be improved.

The operators generally suggested that an improved marketing plan is needed to increase awareness of the GATRA system and the services provided; included were suggestions to improve stop signage, designate bus stops in urban areas and restrict the flag stop policy in those areas. There was a common theme to better orient the service to suit the needs of commuters by providing better service the area MBTA stations and employment centers during AM and PM commutes; also included was the need to reevaluate schedules for routes that currently connect with MBTA Commuter Rail to ensure the GATRA service and MBTA time tables match as closely as possible. Several operators also cited a need to improve the GATRA call center and consolidate operations to provide a better experience to customers.

During the public meetings, comments were generally focused on service needs and improvement. The most common issue raised was a need for service on Sunday for many of the GATRA routes. Another common comment was to to expand the span of service to provide trips earlier in the morning and later into the evening and night; there were also several comments to increase the frequency of service on several routes. Several comments were received regarding service to underserved destinations or to improve connections, cited was a need to improve connections to Taunton from points south and to

improve connections with the MBTA Commuter Rail system. The lack of a convenient and affordable connection between Wareham and New Bedford was also discussed in several meetings.

Surveys

Surveys were used as a minor element of the public outreach and took the form of an open ended comment card. The comments submitted on the comment cards are included in the summary of feedback. In addition to the comment cards, GATRA posted all the proposed service alternatives on a dedicated Regional Transit Plan page contained within the GATRA website. The proposed service alternatives were presented as an image with a link to download a high resolution map; each image included a comment box in which visitors to the page were encouraged to provide feedback on the proposals.

Feedback on the service alternatives was generally positive, and reflected the sentiment received during the public meetings. Generally, service alternatives that received negative feedback included several comments sharing concern for the proposed changes and the impact that may be experienced by regular riders. A complete list of comments received through the website is included as Appendix A.

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Appendix D
Public Hearing Comments